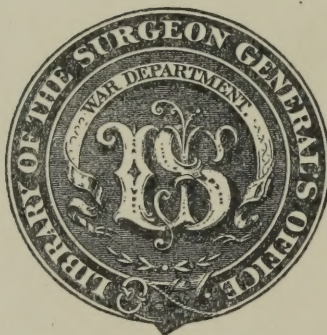




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The
MEDICAL DEPARTMENT
OF THE UNITED STATES ARMY
IN THE WORLD WAR

VOLUME VIII
FIELD OPERATIONS

PREPARED UNDER THE DIRECTION OF
MAJ. GEN. M. W. IRELAND
The Surgeon General

By
COL. CHARLES LYNCH, M. C.
COL. JOSEPH H. FORD, M. C.
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LETTER OF TRANSMISSION

I have the honor to submit herewith a portion of the history of the MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR. The portion submitted is Volume VIII, and is entitled "FIELD OPERATIONS."

M. W. IRELAND

Major General, The Surgeon General

The SECRETARY OF WAR.

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PREFACE

The contents of this volume are confined mainly to a discussion of the activities of the Medical Department in the major operations of the American Expeditionary Forces; however, in the preliminary chapters sufficient information of a general character has been given to enable the medico-military student intelligently to appreciate in what manner the Medical Department was fitted to function. In addition to the discussion of the major operations in the text, there is a supplement in the appendix which gives a chronological record of each division, with more or less on trench warfare and minor actions, such as raids, which illustrate the nature of service under such conditions.

In so far as the major operations are concerned, and more especially is this true of the St. Mihiel and Meuse-Argonne operations, since armies and corps are dealt with separately in addition to divisions, the plan to discuss essential military activities of the armies, corps, and divisions each in turn, then to parallel this discussion with pertinent Medical Department activities, has necessitated an inevitable repetition. It is believed, however, the advantages of this method more than counterbalance its faults.

The official documents of the Medical Department vary greatly both in content and in extent, some being full, clear, and explicit, while others are brief, fragmentary, and, as shown by cross checking, occasionally inaccurate. Records of certain organizations are full and complete for some periods and scant for others. This unevenness in the material available prevents uniform thoroughness in the discussion of the Medical Department's activities in different organizations and, in some cases, in the same organization at different times. It is especially unfortunate that the histories and records of some of the most active organizations, for example, Evacuation Hospitals No. 1 and No. 7, and the Medical Department of the 4th Division are so incomplete that a more thorough discussion of their service than is given herein is impossible.

In order that information might be drawn from as many sources as possible and that each organization receive attention, a sustained effort has been made to use such portion of any text, however fragmentary, as would describe some method in each organization. Allusions, sufficient to indicate their limitations, are made to unusual and individual methods.

In the description of the essential military activities of the American Expeditionary Forces much assistance was obtained from members of the historical section, the Army War College; officers of this section have freely contributed both advice and constructive criticism, for which grateful acknowledgment is now made.

During the several years in which the preparation of the volume has been in progress, the work has been evolutionary in its nature. In its earliest stages of preparation, Col. Bailey K. Ashford, M. C., had the work in charge. At that time the conception was to record the Medical Department activities from individual organization viewpoints; that is to say, each operation was to be viewed separately and chronologically only in so far as a particular organization was concerned, such as, for example, a division. When, through the exigencies of the service, Colonel Ashford became separated from work in connection with the history, and was replaced by Lieut. Col. Louis C. Duncan, M. C., Colonel Duncan developed the original conception, as to arrangement of text material, so as to consider each military operation separately, and in connection therewith only so much of organizational activities as were pertinent. In the main, the latter plan has been followed, and in so doing there has been an inevitable disregard of certain portions of organizational histories not required for the purpose. Colonel Duncan became detached from work on the history by reason of his retirement from the service. Subsequent to his separation from duties in connection with the history, so much new material became available as to make it advisable to rewrite the entire volume.

Acknowledgment is made to Messrs. D. Wilbur Parks and Benjamin M. Oppenheim for the construction of the maps used in this volume. In connection with this preparation, Lieut. Frank Steiner, M. A. C., has been of great assistance in checking the maps against original manuscript and other documents. This officer also, assisted by Mrs. L. G. Knowles, has been of no little assistance in the preparation of the text when the necessity for reconciling discrepancies in different official authorities arose.

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SECTION I

GENERAL VIEW OF THE MEDICAL DEPARTMENT ORGANIZATION

CHAPTER I

PERSONNEL, MATÉRIEL, ORGANIZATION ^a

No hard and fast boundary line between the front and the Services of Supply was, or could have been drawn, so far as medical personnel and matériel were concerned. Naturally, however, so far as might be, the needs of the front had precedence. For example, as noted elsewhere, the statement was made by the chief surgeon, A. E. F., that base hospitals were robbed of medical personnel to provide operating teams for the front, and similar action was taken in other respects, whether personnel or matériel was involved.

This being the case, it is not possible to discuss personnel and matériel solely from the standpoint of the front. This discussion must be in part of the American Expeditionary Forces as a whole. It need not be exhaustive in the latter particular, however, as the question involved pertains mainly to other volumes of the history. In short, in this volume the personnel and matériel of the front will always be kept in mind primarily, but whenever it seems advantageous to discuss these subjects in their regard to the American Expeditionary Forces as a whole this will be done if it is essential to a clear understanding of Medical Department operations at the front. Organization presents fewer difficulties, but here, too, the scope of other volumes must be invaded more or less.

PERSONNEL

Shortly after our declaration of war with Germany, an act of Congress,¹ gave practically unlimited powers to the President to increase temporarily the Military Establishment of the United States. Empowered by this congressional authorization the relative strengths of the Medical Corps² and the enlisted force of the Medical Department³ were increased to 1 and 10 per cent of the Army, respectively. As will be seen, however, this allowance was not put into effect in the American Expeditionary Forces.

ALLOWANCE OF MEDICAL PERSONNEL

Our Tables of Organization prescribed a certain allowance of medical personnel, so far as divisions were concerned, and this had been mobilized and trained with its respective divisions in the United States. The same thing was

^a The text of the Manual for the Medical Department in force during the war which is pertinent to service in campaign is given in full in the Appendix p. 1026. Tables of Organization are given in the Appendix p. 1054.

true of smaller units, generally, and a few nondivisional hospitals were supplied. On the other hand, though the general organization project, American Expeditionary Forces, included the organization of an army and its five component corps, the organization of these was not completed in the United States, so their needs in the American Expeditionary Forces were not met in the same way as were those of divisions. Especially is this true in so far as the Medical Department was concerned. Furthermore, numerous other units which were organized in the American Expeditionary Forces were in the same situation as were the armies and corps.

In these respects it was found there was need for additional personnel for organizations, and replacements, of course, made additional demands. Practically all had to come from the United States, and for every officer and man of the Medical Department place had to be found on a priority schedule, whereon demands by other parts of the Army were equally if not more insistent. Then, too, if possible, priority had to be worked out long in advance, so long, in fact, that future needs could not always be clearly foreseen.

CHIEF SURGEON'S EARLY ESTIMATES OF PERSONNEL NEEDED IN THE AMERICAN EXPEDITIONARY FORCES

In the summer of 1917, when General Pershing prepared his projects for the organization of the forces to be sent to France, the forces considered were divided into the following two groups: A general organization project,⁴ which included army, corps, and divisional troops; and a project of the rear⁵ which included the personnel for the Services of Supply.

In the general organization project, the organizations comprehended were based on Tables of Organization. These tables provided for Medical Department personnel, and no great problem connected with this personnel, confronted the chief surgeon, A. E. F., at the time. The contrary was true for the Medical Department personnel of the Services of Supply.

On August 11, 1917, the chief surgeon, A. E. F., made an estimate of the Medical Department personnel as follows:⁶

AUGUST 11, 1917.

Memorandum for the CHIEF OF STAFF:

The attached estimate of sanitary personnel is submitted in compliance with instructions dated July 30, 1917.

This estimate includes the personnel required for all sanitary formations except those listed in the Tables of Organization as belonging to the division.

The basis of the calculation is an army of 5 corps and 30 divisions. The other fundamental factor in the preparation of this estimate is that hospital beds should be available in the ratio of 1 to each 4 men of the enlisted strength of the Army.

The sanitary formations listed below are those provided by existing regulations. It is probable that the developments of modern warfare will require the creation of sanitary formations not provided for in the attached estimate.

It will be observed that, including dental surgeons, veterinarians, chemists, and female nurses, this estimate calls for a total sanitary personnel of 118,512, or 10.5 per cent. If to this figure is added the sanitary personnel attached to each division, the percentage becomes 14 per cent.

It is believed that if this calculation is erroneous the error will be on the side of conservatism. The duration of hostilities and the difficulties of transporting the totally disabled to the United States and thereby relieving hospital congestion are factors which can only be approximated.

TABLE 1.—*Estimate of sanitary personnel*

Unit	Number	Beds	Medical officers	Dental surgeons	Veterinarians	Chemists	Nurses	Noncommissioned officers	Cooks	Privates	Total
Evacuation hospitals	68	29,376	1,088					1,904	680	9,588	13,260
Base hospitals ¹	171	171,000	6,840				22,230	8,208	4,788	39,330	81,396
Veneraeal hospitals	20	20,000	400					480	280	2,300	3,460
Convalescent camps	20	20,000	200					480	320	1,000	2,000
Hospital trains	50		150				200	150	100	1,000	1,700
Medical supply depots	6		12					36		240	288
Casual camps ²	2		300					2,000		8,000	10,300
Surgeon, base group			8					8		25	41
Base section, base group			9					6		18	33
Intermediate section			3					2		6	11
Advance section			3					2		6	11
Sanitary squads ³			160					160		960	1,280
Evacuation ambulance company, motor ⁴			20					60		680	760
Laboratories, corps	5		20			10		20		40	90
Laboratories, field mobile	30		30			30		30		60	150
Dental surgeons				1,132				200		2,200	3,532
Veterinarians					200						200
		240,376	9,243	1,132	200	40	22,430	13,746	6,168	65,553	118,512

¹ Including contagious and special diseases but not venereal.

² Reserves and training (1 each at base and advance section).

³ Eight per division; 20 divisions.

⁴ One per division; 20 divisions.

PERSONNEL ALLOWED

The program for the Medical Department, exclusive of Medical Department personnel attached to combat organizations, for an army of 20 combat divisions, 10 replacement and base divisions, for general headquarters, army, corps, and Services of Supply troops was as follows:⁵ For the forward services, 31,017 officers and men; for the Services of Supply, 65,593 (plus 10 per cent replacement). The number of officers and enlisted men of the Medical Department attached to the combat organizations of the 30 divisions then contemplated was approximately 17,910.⁷ Thus the allowance of personnel of the Medical Department was about 121,079^b for the projected army of 1,328,448 men, or practically a percentage of 9. When compared with the estimate for Medical Department personnel made by the chief surgeon, A. E. F., on August 11, 1917, it will be seen that the total percentage allowed was less by 1½ per cent than that considered by the chief surgeon as being necessary for the Services of Supply alone. However, the figures in the service of the rear project were considered only as a reasonable approximation of what actually would be required, both for the organization of the Medical Department, A. E. F., and for the preparation of a shipping program.⁵

^b This number of personnel is exclusive of the Veterinary Corps which, in the service of the rear project, was included in the Quartermaster Department.

The following tabulation outlines in detail the program for the Medical Department, A. E. F., both for the forward services and for the Services of Supply as given in the project of the rear:⁵

TABLE 2.—Program for the Medical Department, A. E. F.

GENERAL ORGANIZATION PROJECT

Item No.	Service	Unit	Total number of units	Total strength officers and soldiers	Remarks	References
M-1	Division	Ambulance Service	30	17, 010	2 motor and 2 animal drawn.	See note attached.
M-2	do	Camp infirmaries	120	960		See note M-1.
M-3	do	Field hospital sections	30	10, 560	2 motor and 2 animal drawn.	Do.
M-101	Corps	Sanitary train			Motor units withdrawn for replacement and base divisions.	A. E. F. project, July 11, 1917.
M-201	Army	do	1	927		Do.
M-202	do	Evacuation hospitals	8	1, 560	3,456 to 4,680 beds	See note attached.

PROJECT OF THE REAR

M-401	Line of communications.	Evacuation hospitals.	52	10, 140	22,464 to 30,420 beds	See note attached.
M-402	do	Hospitals	138	45, 954	138, 000 beds	Do.
M-403	do	Venerel hospitals	10	1, 730	10,000 beds	Do.
M-404	do	Convalescent camps	12	1, 200	12,000 beds	Do.
M-405	do	do	1	75	5,000 beds	Do.
M-406	do	Evacuation ambulance company.	20	766	960 lying or 1,920 sitting.	Do.
M-407	do	Hospital trains	50	1, 700	10,000 beds	Do.
M-408	do	Hospital ships				Do.
M-409	do	Headquarters staff	1	41		Do.
M-410	do	Section staff	5	55		Do.
M-411	Division billets	Mobile laboratory	30	150		Do.
M-412	Line of communications.	Stationary laboratory.	5	90		Do.
M-413	do	Sanitary squads	52	1, 404		Do.
M-414	do	Medical supply depot.	6	288		Do.
M-415	do	Dentists	(1)	2, 000	1 private assistant	
M-416	Line of communications; 10 per cent replacement.	Total		{ 65, 593 } { 6, 500 }		Do.

¹ 1 per 1,000.

NOTES EXPLANATORY OF TABLE 2

Item No.

- M-1. A. E. F. project, July 11, 1917, as corrected by cable sent No. 114, par. 18, Aug. 20, 1917; i. e. Sn. Tn. organized as per Table 36, Tables of Organization, 1917.
- M-202. A. E. F. project, July 11, 1917. Organized as per par. 794, Manual for the Medical Department; i. e., 432 beds. In a crisis can be increased to at least three times as many beds as personnel; i. e., 595 beds.
- M-401. Par. 793, Manual for the Medical Department, assigns two evacuation hospitals to L. of C. per division in the zone of the advance; i. e., 40. Including 8 with the army, this allots 2 per all divisions; i. e., 60, and gives the following hospitalization at the front in case of crisis:
- | | |
|--|---------|
| 60 evacuation hospitals | Beds |
| Practical expansion | 25, 920 |
| 69 (55 per cent) field hospitals immobilized | 9, 180 |
| Total | 14, 904 |
| | 50, 004 |
- Or 10 per cent of the combat divisions, the maximum to be expected.
- M-402. Organized as per par. 760, Manual for the Medical Department; capacity increased to 1,000 beds and personnel to 33 officers, 200 soldiers, and 100 nurses.

Item No.

- M-403. Personnel for 1,000-bed venereal hospital: 20 officers, 24 NC Os, 14 cooks, 115 privates; total, 173.
- M-404. Personnel for 1,000-bed convalescent camp: 10 officers, 24 NC Os, 16 cooks, 50 privates; total, 100.
- M-405. Personnel for 5,000-bed convalescent depot, approximately 10 officers, 4 NC Os, 20 privates, Medical Corps, and 5 officers, 16 NC Os, 20 privates for administering duties. The purpose of this depot is to transform the convalescent into the soldier by physical exercises and drills; the convalescents being organized into companies and performing all the routine duties, the most experienced regular medical officers having supervision. Total hospitalization provided exclusive of field hospitals of 200,100 beds.
- M-406. Par. 804, Manual for the Medical Department, allots 1 per division at the front. Headquarters personnel, 1 major, 1 supply officer, 2 sergeants, 2 privates, 2 cars; companies, 1 officer, 3 NC Os, 34 privates, 12 motor ambulances, 1 truck, 1 car, 1 side car.
- M-407. Personnel for trains having capacity of 200 patients, as per par. 614, Manual for the Medical Department, with the addition of 4 nurses.
- M-408. Personnel for hospital ships capacity of 200 beds, as per par. 621, Manual for the Medical Department, 60-70 per cent of wounded will be returned to the front.
- M-409. Personnel, 8 officers, 8 NC Os, 25 privates; total, 41.
- M-410. 3 ports, 1 intermediate, and 1 advance section sanitary service, each: 3 officers, 2 NC Os, 6 privates; total, 11.
- M-411. Personnel, 1 medical officer, 1 chemist, 1 NC O, 2 chauffeurs; total, 5; motor laboratory, 1 car.
- M-412. Personnel, 4 medical officers, 2 chemists, 4 NC Os, 8 privates; total, 18.
- M-413. Personnel, 1 officer, 4 NC Os, 20 privates, 1 truck, 1 side car, 4 bicycles, and 2 chauffeurs; total, 27. Two for each division billet at the front and 12 for lines of communication, viz, 3 ports, 3 port depots, 4 intermediate, 2 advance.
- M-414. Personnel, 2 officers, 6 NC Os, 40 privates, 3 port depots, 2 intermediate, 1 advance.
- M-416. Personnel for 3 port receiving camps, 1 intermediate and 1 advance casual camp: corps and army school details.

PRIORITY SCHEDULE

To provide a proper balance between all the various elements of the American Expeditionary Forces to be shipped from the United States, a priority schedule of shipment of personnel was forwarded by General Pershing to The Adjutant General, October 7, 1917.⁸ The priority schedule comprised six phases. Each of the first five phases embraced a theoretical army corps and in addition certain army troops and Services of Supply troops; the six phases covered the personnel for the organization of an army (exclusive of aviation and replacements) and the Services of Supply troops (exclusive of replacements) necessary to maintain that army. The personnel called for in each of the first five phases varied from 275,200 in the first phase, to 210,000 in the fifth phase; aggregating, 1,230,781. The sixth phase called for Services of Supply troops only, numbering 16,618. The grand total of the phases of the priority schedule was, excluding aviation personnel and replacements, 1,247,399.

DEPARTURES FROM THE PRIORITY SCHEDULE

The first departure of magnitude from the program laid down in the original priority schedule was in consequence of the military situation in

France in March, 1918, and was the direct result of an agreement with Great Britain following a meeting of the supreme war council in the latter part of that month.⁹ Under this agreement, Infantry and Machine Gun troops were to be brought to France in great numbers, by the use of British shipping, without reference to the priority schedule. This agreement made necessary an extensive readjustment of the priority schedule.

Under the Abbeville agreement, May 2, 1918, the policy of giving absolute priority to Infantry and Machine Gun units was continued.⁹ Based on this agreement, a further revision of the priority schedule, to apply to shipments for May and June, was prepared and cabled to War Department, May 12, 1918.⁹ From this time on, frequent revisions were made in the priority schedule, that had in view the increase of the initial project of 30 divisions to one of a much greater number of divisions.⁹ In other words, the project changed from a 1,000,000 basis to one of approximately 2,000,000 men.

EFFECTS OF THE DEPARTURES FROM THE PRIORITY SCHEDULE

Surprisingly rapid work in the summer of 1918 caused the shipments from the United States to exceed all expectations. They contained an excess of combat troops. This was partly due, as has been explained above, to our agreement to ship Infantry and Machine Gun units to France without reference to the priority schedule, and also to the fact that the War Department required from three to six months notice in order to prepare special units, such as the Medical Department units, for the Services of Supply.¹⁰ So long a notice could not be given by General Headquarters A. E. F., and as a result such troops as were already organized in the United States, principally combat troops, were shipped.¹⁰ The practical effect of this, in so far as the Medical Department was concerned, was that combat troops were being shipped to France for the 60 divisions project before the Medical Department had received its allowance for the initial project, which was based on 30 divisions, as will be seen later.

SHORTAGES OF MEDICAL DEPARTMENT PERSONNEL

Until the spring of 1918, the demands for medical personnel were not so insistent as was the case later. Our forces had not been heavily engaged and the French had provided their hospital care in part. Yet, even so, there was then and had been practically from the beginning, a shortage in Medical Department personnel.¹¹

On April 15, 1918, and again on May 2, the chief surgeon, A. E. F., made full and comprehensive statements to the commanding general, Services of Supply, of the constantly increasing deficiency in medical personnel in the A. E. F.¹² It was shown in these communications that the case was urgent, and that the deficiency was not due to recent or unexpected causes, but largely to a failure, extending over many months, to furnish the replacement and Medical Department units which were due the troops in France.

On May 2, 1918, in a cablegram to The Adjutant General, the commander in chief, A. E. F., reported that since July 1, 1917, repeated urgent cable

requests had been made for Medical Department replacements.¹³ Because these requests had been met only in small part, the Medical Department at this time was facing a critical shortage. There were hospitals which could not be opened for lack of personnel; and there was an inadequacy of replacement personnel for organizations with combat units.¹³

As a result of the investigation conducted under the direction of the general staff, General Headquarters, following the engagement at Chateau-Thierry (the Aisne operation) and the attack on Soissons (the Aisne-Marne operation), the Medical Department personnel shortage was clearly defined.¹⁴ The recommendation of the inspector general, A. E. F., based on the situation at Chateau-Thierry was that further provisions be made for emergency reserve surgical teams, and that steps be taken to secure an increase of the sanitary personnel, both commissioned and enlisted.¹⁴

The chief surgeon, A. E. F., in a memorandum dated July 30, 1918, to G-4, General Headquarters, called attention to the fact that surgical teams were being obtained by stripping base hospitals, to a considerable extent, of their surgical staffs, at the very time when their services were needed at the hospitals because of active evacuation of wounded from the front.¹⁵

At times the shortages of approved priority were much larger than in May, 1918, and a cable from the commander in chief, A. E. F., sent on August 10, called for a total Medical Department personnel of 21,700, to be given priority in so far as possible over divisional units.¹⁶ On September 30, the total shortage of approved priority was 26,497.¹⁶

The Medical Department personnel expected in October amounted to 34,868, while approximately 18,000 arrived.¹⁶ On November 11 the shortage of approved priority was: Officers, 3,604; nurses, 6,925; men, 28,023.¹⁶

The following tabulation covering Medical Department personnel shows the bimonthly totals by class of personnel from June 1 to November 30, 1918. These totals are only approximately correct, as reports of arrivals of personnel were often delayed in the mail.¹⁶

	Officers	Nurses	Men
June 1.....	5, 198	2, 529	30, 574
August 1.....	9, 601	4, 735	67, 140
October 1.....	14, 483	7, 522	104, 557
November 30.....	17, 487	8, 951	137, 403

The highest numbers of officers, nurses, and men reported in the American Expeditionary Forces at any time (first week of December, 1918) are as follows: Officers, 18,146; nurses, 10,061; men, 145,815.

The situation at times was desperate, and in the early days of November it appeared that the armistice was the only thing that could save the Medical Department from breaking under the strain.¹¹ On November 11 the Medical Corps was short approximately 250 officers on the division requisitions alone.¹¹

There is no doubt that the shortage in officers, and nurses particularly, contributed to the death of several patients in hospital, as it was necessary in some base hospitals for the bacteriologists, ophthalmologists, otolaryngolo-

gists, commanding officers, and adjutants to assist in performing operations, and in many cases these specialists or administrative officers, comparatively untrained in major surgery, had to perform major operations in order to do what they could to prevent loss of life.¹⁷ Instances were reported where patients died of secondary hemorrhage in base hospitals when no trained attendant was present or available.¹⁷

ASSIGNMENT OF MEDICAL PERSONNEL OF COMBAT DIVISIONS TO OTHER DUTIES

One other matter should be mentioned here which interfered seriously with the Medical Department organization of combat divisions. The growth of the American Expeditionary Forces constantly led to an increase in the number of camps and camp hospitals. The policy of General Headquarters, at first, was that no permanent personnel should be supplied camp hospitals.¹⁸ This necessitated the use of the Medical Department personnel attached to units in training or at rest camps. When the units in training or at rest changed station, their Medical Department personnel as a matter of course had to accompany them. In order to accomplish this, it was imperative that Medical Department personnel with combat units be not diverted and that a certain percentage of personnel not belonging to divisions be assigned permanently to each camp hospital. This subject was presented very forcibly by the commanding general, Services of Supply, February 8, 1918, in a letter to the commander in chief:¹⁸

I may say that no organization arrives in France without a large distribution of measles, mumps, meningitis, and scarlet fever. It requires personnel to decently care for these unfortunates, and I am sure that they are not at this moment getting the care they might have were the personnel available.

The chief surgeon, A. E. F., pertinently stated the situation in referring to the use of personnel withdrawn from combat units in training:¹⁹

This personnel has been entirely inadequate numerically and could not at the same time accompany its organizations when they left camp and remain behind with the sick. Therefore replacements have been used up and base hospitals robbed in an effort to supply the deficiency. But the basic difficulty lies in the continued failure to send over base hospitals and evacuation hospitals in accordance with the priority schedule, which calls for four base hospitals, and two evacuation hospitals for each combat division. Therefore, there should be 104 base hospitals and 52 evacuation hospitals, instead of which there is a total of 42 base hospitals and 8 evacuation hospitals with the A. E. F.

SPECIALIST PERSONNEL

A novel feature of the World War was the very liberal utilization of medical, surgical, and other specialists, exclusively, or practically so, in their own specialties. This plan, of course, was a logical outcome of what had occurred in the ranks of the medical profession throughout the world. No longer do many men holding medical degrees carry on a general practice, the majority being internists, surgeons, orthopedists, ophthalmologists, otolaryngologists, etc. In this connection, the real problem in the American Expeditionary Forces was how best to use the special professional skill of the medical officers.

In September, 1917, special services of the Medical Department were established, with headquarters at Neufchateau.²⁰ These special services were divided into eight branches, each under a director, and comprised surgery, medicine, X ray, neuropsychiatry, skin and genitourinary diseases, and eye, ear, nose, and throat diseases. Medical officers of known qualifications were assigned as consultants to the special services to coordinate and improve the professional activities of the Medical Department. Prior to the publication of General Orders No. 88, G. H. Q., A. E. F., 1918, a number of specialists were so assigned, but there was no adequate organization which could coordinate their activities. With the promulgation of General Orders No. 88, however, the work of these specialists was put on a much more systematic and efficient basis; a director of professional services was appointed; and the positions of chief consultant in both medicine and surgery were created.

The consultants were assigned to supervisory duty wherever their services were needed. The scope of their work included hospitals, principally, but it likewise took them to organizations at the front where their special knowledge could be utilized even before the patients were admitted to hospital.

In order to supplement the facilities for emergency surgical work in evacuation hospitals, surgical teams, consisting usually of one surgeon, an assistant, one anesthetist, two nurses and two orderlies, were organized early in 1918.²¹ Subsequently, splint teams and shock teams were developed.²¹

Specialization obtained also within the divisions, specialists being assigned to the sanitary train for such duties within their respective specialties as might be required by the division concerned. The specialists in question usually comprised a surgeon, an orthopedist, a psychiatrist and a urologist, but this varied somewhat. A medical gas officer was also assigned to each division.²²

MEDICAL PERSONNEL FROM AN UNEXPECTED SOURCE

There was a provision in the Abbeville agreement which proved of inestimable advantage to the Medical Department, A. E. F., namely, the request of the British that we limit sanitary train personnel of the Second Corps, attached to the British Expeditionary Forces, to one-half the complement authorized in our Tables of Organizations. This was necessitated through shortage of British equipment and the fact that a well-organized overhead in British hospitalization and evacuation resources was always locally available for use of these divisions. Consequently, the personnel of approximately 2 field hospitals and 2 ambulance companies of each of our 10 divisions brigaded with the British when sent to France, were concentrated in the seventeenth training area. As there was little likelihood that this sanitary personnel would ever be called for while the divisions continued to operate with the British Expeditionary Forces, they were assigned to service with American forces; and despite their total lack of equipment, they practically saved the day for our medical service during operations in the summer of 1918. In consultation with G-3 of G. H. Q., A. E. F., an arrangement was made whereby this personnel could be utilized wherever their services were

most needed.²³ They were then thrown in behind the line to augment depleted Medical Department establishments, except that some of the ambulance companies were utilized to good advantage at base ports, in rapidly assembling and forwarding incoming ambulances so urgently needed at the front. This reserve, which so fortunately came to hand in this manner in the hour of need, was one of the most important factors enabling the Medical Department to discharge the weighty obligations imposed at that time.²³

MEDICAL DEPARTMENT CASUALS—REPLACEMENTS

It was not until September 30, 1917, that any fairly large number of Medical Department casualties arrived in France. On September 30, 1917, about 650 men landed.²⁴ This was just prior to the establishment of a medical replacement camp at Blois, and it was necessary to assign these 650 soldiers in groups to various base hospitals, which had already arrived and had barrack space to accommodate the additional men. Another casual detachment of 250 men arrived in November, 1917.²⁴ This was the last detachment of any size to arrive for several months, and it was only after urgent appeals had been sent to The Adjutant General that Medical Department casualties again began to be received. This occurred in the latter part of February and in March, 1918.²⁴

Replacements were handled entirely through the Services of Supply. In the fall of 1917, a Medical Department replacement camp was planned at Blois. Its organization was practically completed when its site was given over to a casual officers' depot.¹¹ The depot, however, continued to handle Medical Department casualties, until July, 1918, when a depot for these officers was made a part of the First Depot Division at St. Aignan.¹¹ This transfer was made with a view to establishing a short course of training in field work at the First Depot Division, but it was never possible to carry out this plan because of the constant shortage of Medical Department enlisted personnel which necessitated using all available men at all times, the longest stay in the depot being not more than two weeks. The transfer was a disadvantage in that it caused some delay in getting officers and men shipped to points where they were needed at once. The delay was mainly due to lack of transportation.¹¹

The greatest difficulty was experienced, in January and February, 1918, in tracing Medical Department men who arrived in France. It was estimated that fully 1,000 men, who were sorely needed by the Medical Department, succeeded in transferring to the line of the Army while they were passing through the First Depot Division, St. Aignan.²⁴

MEDICAL DEPARTMENT CONCENTRATION AREA

Establishment of a concentration area for the Medical Department proved an important factor in meeting hospitalization and evacuation demands incident to combat activities. Under conditions first existing in France the Medical Department mobile formations were landed at base ports and dispersed individually to various localities in the area of the Services Supply for the purpose of securing necessary equipment. After this was obtained they were

transported to the combat area and there located. To expedite and facilitate this work there was urgent need that the Medical Department be assigned an area properly located in the zone of the armies to which incoming sanitary formations, particularly evacuation and mobile hospitals, ambulance companies, surgical teams, and other auxiliary personnel for front-line work, could be sent for mobilization, equipment, training, and assignment. Accordingly, upon recommendation of the medical section of G-4, G. H. Q., and with the approval of the French, a Medical Department concentration area was designated and set aside in October, 1918, at Joinville, Department of Haute Marne, for the exclusive use of sanitary formations.²⁵ This area comprised approximately 25 square miles and contained nine villages, affording a billeting capacity for about 500 officers and nurses and 10,000 enlisted men. Good roads led from it to all parts of the American front, and its location was such that any sector could be reached by motor transport within a few hours. Furthermore, it was located on several railroads, which served admirably to assemble units arriving from base ports and to distribute them by rail to the more remote parts of the fronts should need arise.²⁵

Prior to the establishment of this concentration area the Medical Department had lacked means of providing reserve units and of keeping them in close liaison with troops.²⁵

In order that the trained units held in reserve might be thrown in behind any part of the line, as the military situation dictated, geographic proximity, good roads and adequate railroad facilities, were factors of prime importance in the selection of this area.

Upon arrival at a base port, the personnel of all army and corps mobile sanitary formations was sent to this concentration area.²⁵ A supply depot was established in the Joinville area, with sufficient material always on hand to equip these corps and army units as they arrived. After having been equipped, the personnel was given an intensive course of training in a demonstration unit of the same character as that to which they belonged, which was established there. They were thus given a working knowledge of the equipment and functions of the organization which they were to operate in the field.²⁵

This concentration area was also used as a rest area for the personnel of mobile formations when not engaged in active operations, and afforded facilities for overhauling and repairing equipment. Where overworked personnel was sent there for much needed rest, it was replaced by fresh personnel from the area without any change being made in transportation or equipment of the units concerned.²⁵

The value of this expedient was demonstrated even during the very brief period when the Joinville area was operated.

PERSONNEL SUPPLEMENTING THE MEDICAL DEPARTMENT

The personnel of the Medical Department, American Expeditionary Forces, was supplemented extensively by personnel from other branches of the Army as well as from sources without the Army. The practice was tem-

porary in some instances, and in others it was continuous. There were occasions when the Medical Department was confronted with tasks which were infinitely greater than it could accomplish in the time available. It was then that other forces were used temporarily to supplement the Medical Department.

The assistance rendered us by our allies involved a personnel reenforcement as well as help in other directions. When American organizations served with the British and the French, the plan was to hospitalize the American wounded in hospitals (save in field hospitals which we provided ourselves) of the particular ally with which the American organizations were serving. Prior to the organization of the First Army, the French had charged themselves with the care of American wounded back of divisional areas.²⁶ The French were forced to give up this plan. The reasons for this are discussed in Chapter XII. There were occasions, however, when large numbers of American wounded were cared for in French hospitals; for example, when the French general hospital at Bar-le-Duc, provided 2,200 beds for a prospective overflow of American casualties during the St. Mihiel operation.²⁷

During the same operation, because of the acute shortage in Medical Department personnel and to help out in the emergency, it was necessary to secure authority for the assignment of 1,200 men of the line from the orthopedic training battalion to our mobile sanitary formations.²⁸

That the personnel of the Medical Department might be used for more pressing duties connected with the care of the sick and wounded, labor troops were utilized, when their services were available, to dig graves for those who died in hospitals at the front.²⁹

Sections of the United States Army Ambulance Service, on duty with the French, frequently supplemented divisional Medical Department organizations,³⁰ to clear our aid stations. Less frequently they were used to clear our dressing stations; rarely to clear evacuation hospitals not located near a railroad; and very rarely to serve troops in training areas and other localities. During the preparations made for the St. Mihiel operation the situation seemed so acute that 15 ambulance sections, sent to Italy from the United States for duty directly under the jurisdiction of the Italian Government, through its prompt cooperation, were detailed to our service and brought up for use in the engagement.³⁰ It is true that the transport of the sections was the principal consideration, but the personnel of the sections were also acquired and in consequence played their part in increasing the strength of the Medical Department, A. E. F.

To the troops of the Marine Corps and other naval units that served in France there were attached naval Medical Department personnel. This personnel never exceeded 500 in number for any one month (except the month of September, 1918, when it was 561),³¹ but as a supplemental force it was constant.

As will be noted elsewhere, good use was also made to a considerable extent of certain Red Cross personnel.

RESULT OF SHORTAGE IN MEDICAL DEPARTMENT PERSONNEL

There is ample testimony from the highest military authorities to the effect that our Medical Department performed good service in France, and there is certainly no disposition here to controvert such testimony, if this were possible, which is not the case. On the other hand, no subject concerning the Medical Department is of so much importance as the strength of the personnel, which experience shows to be necessary for an army in campaign. The actual fact is that all evidence is to the effect that our Medical Department in France proved too small. If possible, it would be highly desirable, from the historical standpoint, to record what resulted. As the possible results of inadequate medical personnel in an army in campaign are well known, no difficulty presents in a study of the situation as it applies to our Army in France. Inadequacy in Medical Department strength generally results in (1) details from the line to the Medical Department to a considerable extent, thus taking trained line soldiers from combatant duties. In France such detail ran in many companies in battle, from 10 to 12 men.³² Thus the loss in combatant strength (Infantry) in battle ran from 4 to 4.8 per cent. (2) Loss of combatants from the battle line to give aid to wounded comrades and to accompany them to the rear in the absence of Medical Department personnel to do this. (3) Neglect of sick and wounded. This question has, of course, a military, a moral, and a humanitarian aspect. Our Medical Department seems to have succeeded well here, though the chief surgeon mentions loss of life due to shortage in medical personnel.¹⁷

This summary should not be concluded without pointing out the danger of basing future Medical Department strength on the strength in France. Everybody concerned seems to have agreed there was serious shortage. That we got through as well as we did was obviously due to much assistance from outside agencies which was available, fortunately, though to an extent that is not likely to be the case again; to the greatest devotion to duty of the medical personnel generally, which it is hoped can always be counted on, and to a comparatively short war for us. As is pointed out in the chief surgeon's report, the armistice was the only thing that saved us from a disastrous situation resulting from personnel shortage.¹¹

MATÉRIEL

SUPPLIES

The full discussion of this subject will be given in a special volume on supplies. What is said here is confined, so far as possible, to the front, though in order to explain the supply situation there it has been found necessary to discuss supplies in part from the standpoint of the American Expeditionary Forces as a whole.

By no means were all supplies used by the Medical Department furnished by that department. For the present purpose, however, this offers no particular difficulty, as the Medical Department actually supplied a large percentage of the articles involved in the care of sick and wounded at the front.

including motor ambulances for a greater part of the war. For convenience, the motor ambulances will be considered under the head of transportation.

The amounts and kinds of medical supplies were prescribed in certain tables which appeared in the Manual for the Medical Department. Basic allowances brought to France by divisional and other Medical Department organizations were in conformity with these tables, but, as will be seen, great independence was manifested in supplementing this official allowance. This was more especially true in trench warfare. On one occasion the Medical Department of the 1st Division, when that division turned over its sector to another division, is reported to have transferred seven carloads of supplies.³³ Nor was this great increase of supplies wholly confined to trench warfare. In numerous places in the text will be found mention of additional supplies in open warfare. These consisted mainly of blankets, splints, and gas and shock apparatus. Besides these, shell-wound dressings and anti-tetanic serum were found to be especially demanded by the Medical Department at the front during the World War.

Generally speaking, medical supplies were furnished in ample quantity. Mention was made of this fact by the surgeon of the 26th Division, who regarded it as remarkable that in all situations supplies were adequate and were obtainable without delay.³⁴ This does not mean, however, that there were not some shortages in particular articles.

One of these shortages that was keenly felt was that of splints of the latest approved pattern. The American Red Cross established a factory in Paris where these splints were made and supplied to the American Expeditionary Forces in quantities adequate to meet the needs of battle casualties occurring in June and July, 1918.³⁵ Some time later plans were made for the establishment of a plant for the production of nitrous oxide and oxygen for use in anesthesia. This plant also was established in Paris by the American Red Cross.³⁵

RESERVE SUPPLIES IN FRANCE

On August 20, 1917, when there were about 25,000 troops in France, General Pershing announced his policy of supply to the chiefs of the various services, American Expeditionary Forces.³⁶ In this memorandum, with its subsequent additions, there was outlined a definite method of supply procurement, both from the United States by shipment overseas and by purchase in foreign markets. In this it was furthermore specifically set forth by what policy, under procurement, the increment of reserve supplies was to be accumulated. The supplies were divided into the following three classes: Automatic supply for articles regularly conserved so as to permit of automatic supply; replenishment supply for articles of which specified stocks had to be maintained; and exceptional supply for articles of which no specific stocks had to be established.

On September 7, 1917, General Pershing, in a cablegram to The Adjutant General, announced his decision to establish in France reserves of all classes of supplies for 90 days.³⁷ This reserve was based on authorized issues, where

such issues were regular, and on actual periodic consumption of other articles based on French and British experiences during the War. General Pershing directed the chiefs of the various services in France to prepare estimates for cabling, first, a list of four months' supplies to accompany each movement of troops from the United States. This provided a 90 days' reserve and, in addition, one month's automatic supply for consumption and emergency. Second, a list showing the amounts which would have to be shipped monthly for each 25,000 men of the American Expeditionary Forces. In terms of days, the 90-day reserve plan provided for 15 days of the reserve to be in the advance section, 30 days in the intermediate section, and 45 days in the base ports.

In January, 1918, the problem of automatic replacement of supplies of the Medical Department, A. E. F., was taken up by that department on receipt of a letter on this subject from the Office of the Surgeon General.³⁸ The study of the problem was completed by the latter part of March following. In a letter on the subject to the Surgeon General dated April 2, 1918,³⁹ the chief surgeon, A. E. F., explained that it was highly desirable to have a single list of articles used in common by the various branches of the Medical Department, and for that reason a consolidated list of field and post supplies had been made.

ESTABLISHMENT OF MEDICAL SUPPLY DEPOTS

In accordance with the plan to have 90 days' reserve medical supplies in France, supply depots were established as follows: Base depots at each of the ports utilized by American troops; an intermediate depot at Cosne; and an advance depot at Is-sur-Tille.⁴⁰

At an early date (July 15, 1917), a depot was established at Cosne, which later grew into Intermediate Medical Supply Depot No. 3.⁴¹ This depot was the Medical Department's main, full-stock distribution point, and from this establishment the entire medical supply distribution system was largely elaborated. For a considerable period of time practically all supplies were concentrated at and likewise distributed from Cosne.

The original plan was to develop the supply depot at Cosne and plans were submitted for its expansion. Since Cosne was off the railroad lines operated by the Americans, and the French railroads were unable to handle increased shipments therefrom, the original plans for its development were abandoned.⁴²

As a substitution, Intermediate Medical Supply Depot No. 2, which had been established at Gievres, October 20, 1917,⁴³ was to replace the depot at Cosne as the main issuing depot, the Cosne depot being retained as an auxiliary. As the depot at Gievres developed, this plan was being made effective.

Advance Medical Supply Depot No. 1, at Is-sur-Tille, was put into operation November 18, 1917.⁴³ This depot, an extremely important unit, largely took over the distribution of medical supplies to troops and units in the advance section. It was not, however, until considerably later that this depot was made a full-stock unit. Prior to its being made a full-stock depot its activities were confined largely to the supply of medical units on duty with combatant organizations. The problem of supplying the numerous fixed

Medical Department organizations in the advance, intermediate, and base sections continued to be a responsibility of the main depot at Cosne. As the situation developed the depot at Gievres was increased in capacity and utilized largely for shipments of carload lots. Small issuing depots were gradually established at the main base ports and gradually larger base storage stations were installed at these places.⁴⁴

ESTABLISHMENT OF "ARMY DUMPS" (MEDICAL)

With the organization of the Paris group and later of the First Army, the establishment of army dumps became essential. In connection with the Medical Department purchasing business in Paris, there had been established previously in Paris a small medical receiving warehouse; and although this was utilized somewhat in the manner of an army dump, it was not essentially that type of depot. The first army dump established was at Lieusaint,⁴⁵ and this was organized and administered for the purpose of supplying combat units in the Paris group and, later, the First Army.

The supply table authorized for an army dump, which in common parlance later became known as the "Lieusaint list," grew out of the establishment of this army dump.⁴⁵ The original basis of the "Lieusaint list" was the replacements necessary for one combat division for eight days, and the officer in charge of this distribution point was authorized to maintain in storage as many times this amount as there were combatant divisions in his area.⁴⁵ This practically constituted a stock maximum for his depot. Practically this same system, although with a modified list, was adopted for use in planning the distribution of medical supplies when the offensive operations, directed toward the reduction of the St. Mihiel salient, and later against the Meuse-Argonne area, were in preparation. Gradually, however, a policy was developed of establishing army dumps for which there was authorized a definite fixed stock maximum without reference to the number of combat units to be supplied, but based more upon the number of such dumps established in relationship to the known number of divisions to be employed in the operation. Such dumps, for instance, were established at Toul, Souilly, Vaubecourt, Fleury, and Les Islettes, and in the order named.⁴⁵

Toward the end of hostilities the manner of distribution from the supply echelons at the base to those in the most forward areas had been worked out with exceeding care. The plan of distribution, as evolved, was an elaboration of the policies under which the units previously had been functioning, but it was better balanced, and all echelons were much more clearly defined. This was also true as regards the important technique of filling the requests for supplies of forward units from the unit next in the rear.⁴⁵

MEDICAL SUPPLY ECHELONS AND SYSTEMS OF REPLENISHMENT

Essentially this scheme of distribution involved the use of several echelons. They were as follows:⁴⁵ Divisional medical supply unit; army park medical supply dump (for each corps); army medical supply depots (for each army); Services of Supply depots (advance and base).

The officer in charge of the divisional medical supply unit normally indicated the need of all organizations in his particular division upon a consolidated requisition, which, after passing through the office of the division surgeon and that of G-1, was forwarded for filling to an army park.⁴⁶ Often the division medical supply officer was far removed from the division surgeon and the division staff generally, and as a result numerous requisitions had to be sent to the nearest army park in a most informal manner and without any visé or approval. This was recognized as a necessity, and such contingencies were provided for by authorizing the park personnel to honor such emergency calls. It was found in practice that such authorizations increased the confidence of those in the forward areas and that the end result was a better and closer cooperation of all concerned.⁴⁶

The logical medical stock for army parks included only articles of combat equipment and supplies and trench stores, and divisional units would naturally requisition only such articles, but in the early developmental days of the corps echelon it was found necessary to carry limited replacements at these parks, for such units as mobile and evacuation hospitals. It was very soon learned, however, that this produced a useless dispersion of equipment which it was difficult to obtain, and quickly rendered immobile the army park medical supply dumps—units, which of necessity, must remain mobile. It therefore became the policy to confine articles on the fixed stock maximum of such parks to those of combat material and trench stores. Just as soon as this decision was made it necessitated the establishment of a new echelon, inasmuch as large hospitals in the advance zone would now be required to replenish their stock from a new advance supply unit.⁴⁶

It was therefore contemplated immediately to establish (and sites were actually selected) full-stock army advance medical supply depots on a basis of one per army.⁴⁶ This unit, although carrying a complete stock, carried its articles, in so far as quantity was concerned, upon a very limited time basis. The functions, then, of this larger unit would be primarily to fill the calls of the army parks and secondarily to fill requisitions from medical units in the advance zone. The latter was obviated as far as possible by distribution from the rear through "controlled stores" in other depots.⁴⁶

SHORTAGES

It will be recalled that it was not until well into the spring of 1918 that medical supplies began to be shipped automatically to France. Prior to this time procurement was by American Expeditionary Forces requisition, which led to a real shortage about December 1, 1917. Toward the end of that month there were approximately 175,000³¹ troops in the American Expeditionary Forces, and, although the troops had been coming over slowly, more had arrived than had been anticipated. This inevitably reduced the reserve supplies, which on January 2, 1918, were reported by the chief surgeon, line of communications, to be 25 per cent short.⁴⁷

On March 11, 1918, General Pershing cabled to The Adjutant General that the reserve stock in the medical supply depots in France had been reduced

to the unsafe level of approximately 30 days' supply.⁴⁸ General Pershing also stated in this cablegram that he was convinced that the automatic medical supplies were not being placed on ships in quantities determined as necessary and sufficient to meet the needs of troops then in France. He requested that immediate steps be taken to ship these supplies.

In the latter part of March, 1918, when the Germans began their first spring offensive, call after call was sent to America to ship combat troops and combat supplies. Nothing else was given priority; the Medical Department priority shipment schedule was set aside.⁴⁹ Though there were but 320,000 troops in France on April 1,⁵¹ and 300,000 now due to arrive each month, base hospital after base hospital arrived without its equipment. Camp hospitals were being rapidly expanded to meet the local needs of incoming troops.

At this time (April, May, and June, 1918), the dispersion of the American Expeditionary Forces became progressively greater. With each extension the supply problems of the various services became more complex.

In the case of the Medical Department the reserve had never been great. As a result of the extremely active period between June 1 and August 1, 1918, this reserve became considerably depleted. There were several reasons for this depletion, but the principal one was the inability of the authorities in home territory to ship supplies equal to the needs of the Medical Department, A. E. F.

By August 1, 1918, there were approximately 1,184,000 men in the American Expeditionary Forces,⁵¹ including 29 divisions. Great quantities of material had to be shipped them for replacement as well as initial equipment.

Shortages of strictly technical Medical Department equipment and supplies were consistently distributed among all classes of such material during the period prior to the large offensive of the autumn, 1918. It appeared, however, that the more highly technical articles were most lacking and shortages were particularly apparent in dental, veterinary, and X-ray supplies, and in surgical instruments.⁵⁰ Fortunately, a repair unit for surgical instruments and typewriters reached the American Expeditionary Forces from the United States at about this time.⁵¹ This unit proved of the greatest value in connection with the conservation of surgical instruments and typewriters.

Just before the armistice, the major part of the combat troops of the American Expeditionary Forces was concentrated behind a front approximately 50 miles in extent. Advance, intermediate, and base depots existed and their storage contained a reasonable amount of supplies. Maintenance problems had been worked out in actual combat. Our troops had overcome every German division which had been thrown against them, and throughout it all there had been no essential shortage in medical supplies.

HOSPITALS

It has been necessary in discussing personnel to mention certain shortages in hospitals. This description of the situation is pertinent here also, but what has been said need not be repeated.

The division medical units, including field hospitals, had been organized in the United States, and accompanied their respective divisions overseas. The situation was far different, however, in respect to the hospital establishments immediately to the rear of divisions.

In providing for early care of battle casualties behind the divisions, reliance was placed, by our pre-war organization, chiefly on evacuation hospitals. For each division sent to France the shipping schedule called for the coincident dispatch of two of these units; but in spite of repeated cable appeals to the War Department this automatic supply was never furnished, and shortage of evacuation hospitals was a source of continual anxiety to the Medical Department.⁵² Not until after the armistice was there ever more than 25 per cent of the authorized quota of these units in France; though as indicated elsewhere in the early period of our activities there, this shortage did not cause any great concern.⁵² Then, with fixed hospitalization in the rear fairly well established, the hospital needs of our troops engaged in training for trench warfare were easily met. Static conditions then prevailed. A state of immobilization of troops, too, had obtained long enough to permit the French to construct well-organized and well-equipped hut evacuation hospitals behind their trenches, or, in lieu of construction, to take over and alter existing buildings for hospital purposes.⁵³ These French hospitals afforded every facility for carrying on treatment of the wounded along modern lines. Coincident with the arrival of one of our divisions in the trenches, it was arranged that the French should turn over to our use one or more of these hospitals, either temporarily or permanently, and hospitals thus taken over were transferred to us with full equipment.⁵³ Then merely the installation of our own medical personnel was required before the formation concerned could function as an American hospital and care for American patients. This very desirable arrangement from our point of view obtained, however, only in fairly restricted areas, notably in Toul, Luneville, and Baccarat. These were the areas in which the greater part of the training of American troops in trench warfare was conducted.⁵² In remoter regions to which it sometimes was necessary that our troops be sent, either for training or to relieve French troops in quiet sectors of the line, our casualties were sent to near-by French hospitals administered by French personnel. Then, frequent changes in the designation of training sectors for American troops made strictly American hospitalization impracticable at times. While this was our policy from the first, changes were made so rapidly that rarely was it advisable to be very insistent in requests for such facilities. The situation then was that while American troops still possessed and operated to a maximum degree their own division field hospitals, when sick and wounded were admitted to French hospitals it was seldom that American personnel was authorized to care for them. This unsatisfactory condition soon made it necessary for the Medical Department, A. E. F., to use every effort to obtain control over the treatment of American patients. Quite naturally the Americans preferred to be cared for by their own countrymen, if for no other reason than that they could thus easily make known their wants.⁵³

The German offensive of March 21, 1918, created an entirely new hospital situation on all parts of the allied front.⁵⁴ Until that time, hospitalization for the allies had been a comparatively simple matter. This German offensive caused a reversion from static, or trench, warfare to mobile, or open warfare. Incident to the changes daily taking place in the surging battle lines, the stationary, huddled evacuation hospitals, which previously had answered well, became relatively useless and, for purposes of immediate combat hospitalization, a thing of the past.⁵⁴

To maintain hospitalization near the front, the utilization of tentage, and such existing buildings as could be found and were habitable, became necessary. As the Medical Department did not have at hand the mobile hospitalization provided for in the shipping schedule, this shortage seriously increased our operating handicaps.⁵⁴

The pioneer experience in our divorce from the conditions of static warfare to more or less constant movements of open warfare devolved upon the 1st Division.⁵⁵ As mentioned elsewhere, this division was hurriedly withdrawn from the Toul sector and placed at the disposition of the French, in reserve behind the Montdidier salient.⁵⁵ The American Expeditionary Forces possessed no hospitalization in that region, at the time, short of Paris.⁵⁵ As the division was placed under the French, the responsibility for hospitalizing the sick and wounded devolved upon and was assumed by the French.⁵⁶ This obligation was in keeping with the ruling previously adopted during our period of trench warfare instruction. In orders prepared by the French and directing the dispatch of the 1st Division to the new front, it was specified that all hospitalization (except that furnished by divisional field hospitals) and evacuation of our troops would be provided by them.⁵⁵ These orders also prescribed the liaison to be established between our field hospitals and the French hospitals farther to the rear.

Despite a most serious shortage in personnel and equipment for our army sanitary units, and the frankly stated objection of the French to the establishment of American Expeditionary Forces evacuation hospitals in the rear of divisions operating with them, it was very early recognized that we should make every effort to provide for the evacuation and hospitalization of our own wounded.

Repeated efforts were made to secure permission from the French to establish at Beauvais at least one American evacuation hospital in the rear of the 1st Division, during the operations of that division at Cantigny, the latter part of May, 1918.⁵⁵ These requests were disapproved by the French on the ground that a dual hospitalization and evacuation service in that region, in view of existing traffic conditions, would result only in confusion.⁵⁵ As will be mentioned later, the permission of the French was obtained to establish an American Red Cross hospital there.

With the beginning of the German Aisne offensive, the latter part of May, 1918, it became necessary hurriedly to place additional American divisions on the enemy front before Paris.⁵⁵ This created a new hospitalization

problem. Since the French had lost all their evacuation hospitals in that region, in their retreat, they were not in a position to assume the additional burden of caring for American casualties.⁵⁷

For the first time, the French not only permitted but assisted the American Expeditionary Forces in every way to begin the establishment of its own chain of hospitalization behind its engaged divisions, and the evacuation of our casualties from the hospitals, by means of American hospital trains, to our fixed hospitals in the rear.⁵⁷ Obstacles, however, were almost insuperable, for the rapid German advance had so demoralized railway service that it was impossible to operate hospital trains, and for a short time evacuation by ambulance and truck was necessary for a distance of from 40 to 100 kilometers, (25 to 62 miles) in order to clear our field hospitals. This situation was immeasurably aggravated by our great lack of ambulances.⁵⁷ The difficulties thus encountered and the manner in which they were met are discussed later.

ASSISTANCE RENDERED BY AMERICAN RED CROSS HOSPITALS

At this point it should be stated that especially during the early part of the development of the American Expeditionary Forces, American Red Cross hospitals played a very important part in the care of our sick and wounded. Among other institutions which the Red Cross had established for service of the French, was the "American Ambulance" in Paris. This was turned over to the American Expeditionary Forces on July 20, 1917, and was designated American Red Cross Military Hospital, No. 1, though it continued at first to receive only French casualties.⁵⁸ As General Pershing would not permit American military hospitals in Paris at that time,⁵⁹ and hospital facilities proved to be needed there, the American National Red Cross then established a number of hospitals whose collective capacity was rapidly increased to 10,000 beds.⁵⁷ The association also established other hospitals in the field, where they operated as evacuation hospitals in rear of the various divisions. These Red Cross hospitals were used in the zone of the armies only through urgent necessity. They were organized at the request of the chief surgeon. Personnel for them came largely from the army, but their equipment was supplied by the Red Cross. The Medical Department was at all times so short of resources that it was necessary to call upon the Red Cross to furnish hospital tentage, equipment, and some personnel to meet our needs. Its hospitals functioned in the same manner as did the army evacuation hospitals, each being under the command of an officer of the Medical Corps, save one under a French medical officer, located at Beauvais during the Cantigny operations. Two were utilized during the Chateau-Thierry operation, and two during the St. Mihiel and Meuse-Argonne operations.⁵⁸

MEDICAL DEPARTMENT TRANSPORTATION

Transportation facilities of the Medical Department, A. E. F., comprised ambulances, trucks, trains (including those on light railways), and canal barges.

AMBULANCES

Ambulances comprised two kinds of vehicles: Animal-drawn and motor. The Medical Department made use of both kinds of ambulances for the transportation of patients, in the American Expeditionary Forces. Transportation of patients was a responsibility with which that department was charged throughout.

PROCUREMENT OF AMBULANCES

In the American Expeditionary Forces, the use of animal-drawn ambulances was very restricted. These ambulances were assigned only to Medical Department units serving with combat troops; that is, one ambulance company of each divisional ambulance section was animal-drawn.⁶⁰ Both animal-drawn ambulances and animals for them were supplied by the Quartermaster Corps;⁶⁰ their procurement was not a responsibility of the Medical Department.

The procurement of motor ambulances, on the other hand, was a direct responsibility of the Medical Department for the greater part of the war.⁶¹ In discussing this question it must be considered from both sides of the Atlantic. This is because motor ambulances, though classed as Medical Department matériel when we entered the World War, became Motor Transport Corps matériel some months prior to the armistice. Since this change was effected considerably earlier in the American Expeditionary Forces than it was in the United States, there was a period when, as will be explained, the Medical Department in the United States was purchasing motor ambulances and shipping them abroad on Motor Transport Corps tonnage.

In December, 1917, what was then the Motor Transportation Service was created a part of the American Expeditionary Forces.⁶² Its purpose, in part, was the technical supervision of all motor-driven vehicles; their reception, organization, and assignment (except vehicles belonging to organized units); and the organization and operation of repair and supply depots for motor vehicles. Until May, 1918, motor ambulances in the American Expeditionary Forces were not included in the classes of vehicles controlled by the Motor Transport Service, A. E. F.;⁶³ however, they were maintained in a state of repair by that service. From May, however, all motor ambulances arriving in the American Expeditionary Forces were turned over to what had now become the Motor Transport Corps, A. E. F.; but being classed as special vehicles, motor ambulances were held by that corps subject to the orders of the chief surgeon, A. E. F.⁶³ Between this time and the following August, though the Medical Department procured motor ambulances in the United States, they were shipped overseas on Motor Transport Corps tonnage.⁶⁴ Subsequent to August, when the Motor Transport Corps, in the United States, took over the procurement of motor ambulances from the Medical Department,⁶⁵ their shipment overseas became a responsibility of the Motor Transport Corps. Thereafter shipments were based on estimates furnished by the Medical Department, A. E. F.

METHODS OF SHIPPING AMBULANCES FROM THE UNITED STATES

Tables of Organization and Equipment prescribed the number of ambulances for Medical Department units serving with combat troops. For a while (until October, 1917) ambulances belonging to these organizations were shipped from the United States with the organizations. This was not a practical method, and it was discontinued in October, 1917.⁶⁶ Thereafter all ambulances were sent to France in a knocked-down condition.⁶⁶ This was done not only to conserve tonnage but to preserve the ambulances in good condition.

Shipping ambulances knocked down necessitated having a skilled force of men in France to assemble them on their arrival. It was intended that all ambulances should reach the American Expeditionary Forces through the base port at St. Nazaire. Accordingly, a group of skilled mechanics was established at that port by the Medical Department soon after (November, 1917) it was determined to ship unassembled ambulances. However, as it happened, ambulances were subsequently received not only at St. Nazaire but also at Brest, Le Havre, La Pallice, Bordeaux, and sometimes at Marseille. There never was any way of determining in advance how many ambulances would arrive at any of these places, nor when they might be expected.⁶⁶ It was a common occurrence for chassis to arrive at one port and bodies of ambulances at another, necessitating driving the chassis overland to where the bodies had been received.

DISTRIBUTION

The distribution of ambulances in the American Expeditionary Forces was influenced by two factors: Ambulances for Medical Department units with the forward services, and those for the services of the rear. In the forward services, Tables of Organization governed the question of the number of ambulances that each Medical Department unit should have. The actual assignment of ambulances to units serving in the zone of the advance, however, was controlled by General Headquarters on a priority basis and in accordance with Tables of Organization.⁶⁷

Since no allowances of ambulances were specified by Tables of Organization for the Services of Supply, except for combat organizations serving therein, the distribution of ambulances in that area was based on local needs, and was, in turn, contingent upon the ambulances available. As the supply of ambulances in the American Expeditionary Forces was always short, as will be shown later, it was necessary to effect some measure which would stretch the smallest number over the greatest territory. This was done by establishing a system of pooling the ambulances.

POOLING SYSTEM

The principle of supplying individual units in the Services of Supply, such as regiments, service battalions, and signal companies, with ambulances

was found to be uneconomical as regards both supplies for and upkeep of these vehicles.⁶⁷ Therefore, in order that our resources might be conserved and the greatest use of the limited number of ambulances on hand might be made, pools of ambulances were established at all hospital centers, base hospitals and in each base section. These pools were under the direct control of the transportation section of the chief surgeon's office, A. E. F. As frequently happened, ambulances were detached from these pools for purposes of temporary duty elsewhere, being returned to the pool when the unit, to which the ambulances had been assigned temporarily, moved out of the Services of Supply, or when there was no longer a need for the temporary use of the ambulances. As might be seen, this allowed a very elastic use of ambulances located in the Services of Supply.

Owing to the great shortage of ambulances in the American Expeditionary Forces, it was frequently necessary for all of the ambulances in one pool to be sent to such places as base hospitals so as to facilitate unloading hospital trains, or for like emergencies. Upon the completion of such duties the ambulances concerned would be returned to the pool to which they belonged.⁶⁷

SHORTAGES OF AMBULANCES

Before December, 1917, there had already developed an acute shortage of ambulances, and shipments from the United States, because of procurement and tonnage difficulties, were under our estimated need.⁶⁸ Although cable after cable was dispatched setting forth our emergency needs along this line, the shortage continued to increase. The problem of estimating our requirements was made more difficult by the lack of tables of organization in Services of Supply, corps, and army units;⁶⁸ existing tables indicated transportation for divisions only. In the late spring of 1918, however, an estimate of the situation was made, which resulted in the Medical Department assuming that from front to rear a minimum of 120 motor ambulances per division in France would be required.⁶⁸ The number of ambulances required for the American Expeditionary Forces to cover past shortages and future needs was estimated, and on July 3, 1918, the results of these estimates were included in a cable.⁶⁴ Only during the months of September, October, and November, 1918, was it apparent that the number of motor ambulances which the authorities in the United States stated they would float would have any influence upon reducing the accumulated shortage.⁶⁸ Shipments had heretofore not even covered current needs.

Shortages were the subject of constant reports. To cover them in part, large numbers of ambulances were borrowed from the French and from the Red Cross.⁶⁹ Sections of the United States Army Ambulance Service proved of particular value. The need for ambulances was so acute that we actually had to borrow 15 of these sections we had sent to Italy for service with the Italian army.⁶⁹

In all there were shipped to France (and Italy) approximately 3,070 G. M. C. ambulances and 3,805 Ford ambulances.⁷⁰

MOTOR TRUCKS

The primary purpose of motor trucks assigned to mobile Medical Department units was, of course, to convey the equipment of such units from one point to another within the theater of operations, as well as to transport their replenishment supplies when the units had been established and were operating. The number of trucks for each motorized field hospital and each ambulance company was prescribed by Tables of Organization and Equipment.⁷¹ For other mobile Medical Department organizations, such as the evacuation hospital, there was no prescribed number of trucks.

In most divisions in the American Expeditionary Forces truck transportation was pooled as a matter of conservancy. Consequently, when it became necessary to change the location of a field hospital, trucks were assigned for this purpose. Likewise, trucks were assigned to evacuation hospitals whenever it was necessary to move the mobile parts of such hospitals.

There were frequent occasions, during active operations, when motor trucks were put to other uses by the Medical Department, than for cargo-carrying purposes. This was the case when great numbers of casualties had occurred, from time to time, and the number of ambulances available was inadequate to effect prompt evacuation.

HOSPITAL TRAINS

For the purpose of this history, hospital trains are considered more in the light of hospitals than as a means of transportation, because they were for the most part truly mobile hospitals. Their general make-up, their direct administrative control, and the details of what they effected in the way of evacuation will be found in Volume II of this history, which has to do with the administration of the Medical Department, A. E. F. For present purposes the question of their procurement and their subsequent operative control at the front will be discussed.

The first plan of the chief surgeon, A. E. F., was to use ordinary box cars adapted to hospital train purposes by introducing fittings into them for supporting tiers of litters.⁷² These fittings were metal posts to be screwed to the floor of the box cars in such a way that they would occupy little space and could be cleared away, when not wanted, thus permitting the box cars to serve the double purpose of evacuating wounded from the front and, when empty of wounded, of carrying supplies back to the troops at the front. Because both the British and French had found this arrangement inexpedient, the plan was not carried out in the American Expeditionary Forces.⁷³

Limited ship tonnage space precluded procuring railroad coaches for hospital trains from the United States; consequently, two converted hospital trains were leased from the French, and 19 specially constructed, were purchased from the British.⁷⁴ As these 21 trains were entirely inadequate during the St. Mihiel and the Meuse-Argonne operations, 45 additional

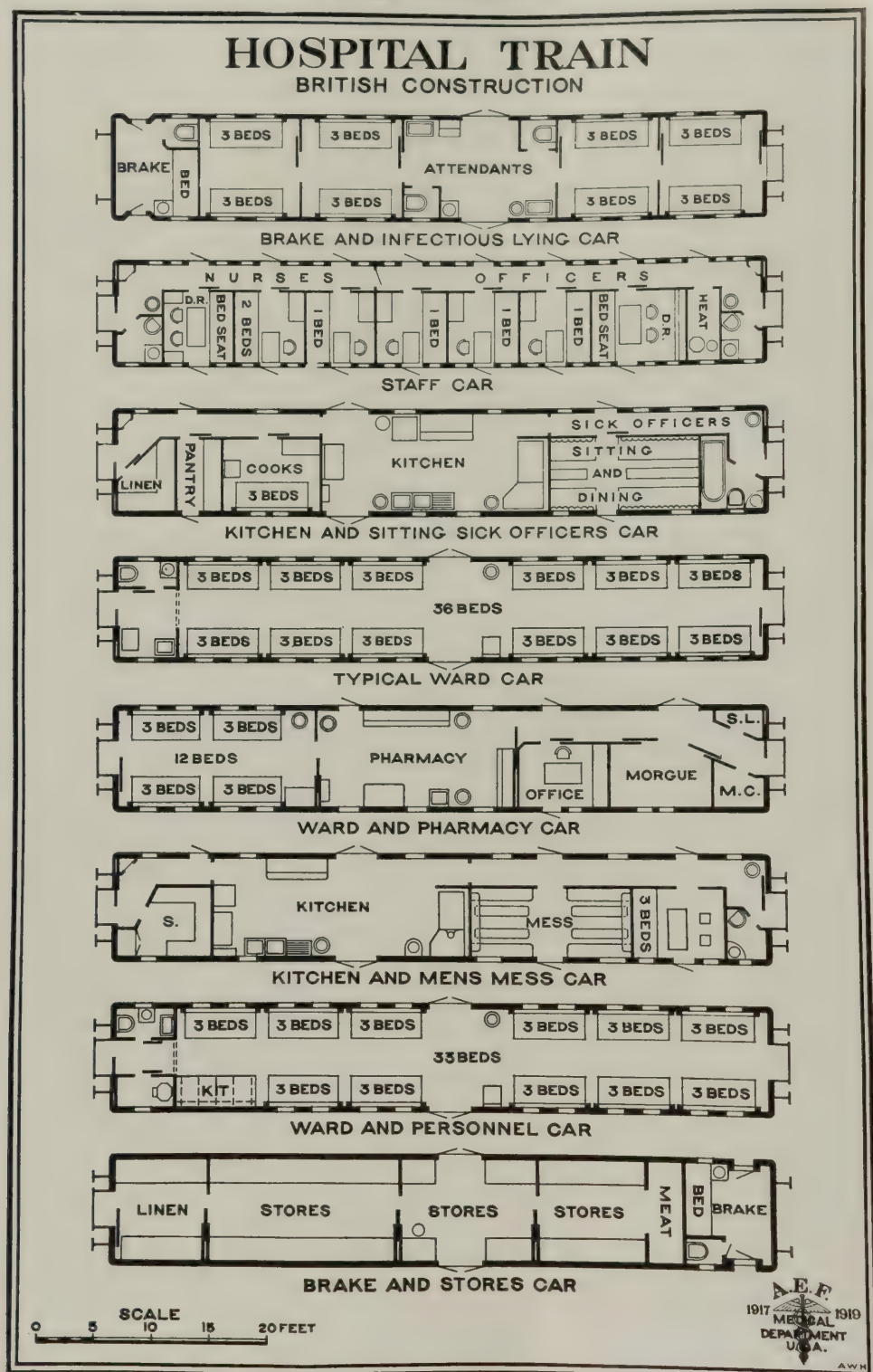


FIG. 1.—Plan of the different cars comprising the hospital train of British construction used by the American Expeditionary Forces



FIG. 2.—Exterior view of Hospital Train No. 56, A. E. F.



FIG. 3.—Interior of ward car; beds not made up



FIG. 4.—Interior of ward car, showing attendant's compartment

trains were rented from the French for use of the Medical Department during the former operation, and 46 during the latter.⁷²

Because the office of the chief surgeon, A. E. F., was in the Services of Supply, far removed from the front, it was necessary to divide the control of the movements of hospital trains. This was accomplished by giving the control of the trains, operating at the front, to the representative of the chief surgeon in the fourth section of the general staff at General Headquarters. This control normally covered primary evacuation from the front. All other hospital train movements, however, were controlled from the office of the chief surgeon at Tours.



FIG. 5.—Interior of ward car; beds raised

Hospital train movements from the front were effected directly by regulating officers, who had on their staffs officers of the Medical Department representing the chief surgeon, A. E. F. Regulating stations were established and administered by the assistant chief of staff G-4. Movements of hospital trains in the rear of the zone of armies were provided for by the train movement bureau, headquarters, Services of Supply, in accordance with requests made upon it for this purpose by the chief surgeon, A. E. F.⁷³

LIGHT RAILWAY TRAINS

During the St. Mihiel and Meuse-Argonne operations, some use was made of narrow-gauge (60 cm.) railway lines, to evacuate casualties.⁷⁴ Hospital



FIG. 6.—Hospital train operating room



FIG. 7.—Hospital train kitchen



FIG. 8.—Hospital train personnel car



FIG. 9.—Hospital train; method of loading



FIG. 10.—French converted hospital train, being unloaded at Hospital Center, Allerey, A. E. F.



FIG. 11.—Light railway train; fitted for carrying wounded

trains were formed from the returning cars, and appliances that were readily removable were attached to the flat gondolas of this system, so that it was possible with a train composed of an engine and 10 cars to transport some 80 "lying cases." This method of transportation would have been very saving of ambulances, and it is believed had the war continued for even a few months more a great deal of use would have been made of it by the Medical Department.⁷⁴

At the time of the signing of the armistice, some 500 cars were available for purposes of evacuation, and it was practicable to manufacture others as fast as need for them developed. The cars, however, which were used



FIG. 12.—Hospital barge

in the St. Mihiel and Meuse-Argonne operations were built with the center of mass too high for the rough construction of the light railways in these sectors, and derailments were so numerous as to cause their abandonment.⁷⁵

HOSPITAL BARGES

During the activities of the American Expeditionary Forces at Chateau-Thierry, many patients were evacuated to Paris by means of barges. The barges were operated in flotillas of six, motive power being furnished by tugboats.⁷⁶

In August, 1918, the chief surgeon, A. E. F., proposed that barges be regularly used as an additional means of transporting sick and wounded, more especially seriously wounded and gassed soldiers who could not be

otherwise transported. His plan was adopted. At about the time of the signing of the armistice there were 60 barges being converted to hospital purposes.⁷⁵

ORGANIZATION

When we entered the World War, the organization of the Medical Department in the theater of operations was as follows:⁷⁶

TABLE 3.—*Organization of Medical Department provided by Manual for the Medical Department, 1916*⁷⁶

Theater of operations (chief surgeon, field army).	Zone of the advance (division surgeons).	Medical department personnel on duty with line organizations. Sanitary trains...	<div> <div> Directors of ambulance companies. Directors of field hospitals. </div> <div> Camp infirmaries. Ambulance companies. Field hospitals. </div> </div>
	Zone of the line of communications (surgeon, base group).	Base section (surgeon, base group): Base medical supply depot. Base hospitals. Convalescent camps. Contagious disease hospitals. Trains, boats, and ships. Casual camps for sanitary troops. Sanitary squads. Field laboratories. American National Red Cross units. Sanitary inspectors. Intermediate section (surgeon, intermediate group): Rest stations. American National Red Cross units. Advance section (surgeon, advance group): Advance medical supply depot. Sanitary column...	<div> Evacuation hospitals. Evacuation ambulance companies. </div>

It will be noted that this plan contemplated a field army made up of divisions, which was in conformity with our Army organization at that time. To meet the new conditions of warfare, however, an entirely new army organization was adopted by the commander in chief, A. E. F., and proposed by him to the War Department July 11, 1917.⁷⁷ This organization project of General Pershing, as adopted by the War Department, replaced the field army by corps, each consisting of six divisions, 4 of which were designated for combat, 1 for replacement and school, and 1 for replacement and training.⁷⁸ Armies were also provided for, to consist normally of five corps.⁷⁹

Certain Services of Supply troops were provided for in this general organization project. There was not included, however, all of the organization of the lines of communications, which was not projected until September 18, 1917, when plans for a complete service of the rear, which listed item by item the troops considered necessary for the Services of Supply, were cabled to the War Department and then approved.⁸⁰ For purposes of local administration the lines of communications in France, now Services of Supply, was subdivided into districts or sections.⁸¹ The territorial sections corresponding to and immediately surrounding the principal ports were called base sections:

there was an intermediate section embracing the region of the great storage depots; and an advance section extending to the zone of operations, within which the billeting and training areas for the earlier divisions were located.

Following these changes, a change in administrative and technical supervision of troops was evolved by General Pershing.⁸² The general staff of General Headquarters, A. E. F., was expanded to comprise two additional sections. It should be noted that Field Service Regulations, United States Army, contemplated three sections of the general staff for an army operating in the field, as follows:⁸³ First, combat; second, administrative; third, intelligence. The composition of the general staff at G. H. Q., A. E. F., however, was organized as follows:⁸⁴ First, administrative; second, intelligence; third, operations; fourth, coordination of supply services (including Construction, Transportation, and Medical Departments); and fifth, training. These sections were referred to as G-1, G-2, etc.

It was with the fourth section of the general staff, General Headquarters, that the Medical Department was particularly concerned, for it was this section that was charged with the supervision of hospitalization and the evacuation of sick and wounded.⁸⁴ To enable it to function with the greatest degree of effectiveness, it was essential that expert technical advice be immediately and constantly available to its chief. This was possible so long as the chief surgeon's office remained at General Headquarters, but the order which established the general staff at General Headquarters on its new, expanded basis, also provided for the removal of the offices of certain chiefs of staff services to headquarters, Services of Supply. Among these was included the office of the chief surgeon, A. E. F. Consequently, to provide representation of the chief surgeon at General Headquarters, authority was given him, as was given to all chiefs of staff services, to designate an officer of the Medical Department for service in connection with each section of the general staff at General Headquarters.⁸⁴

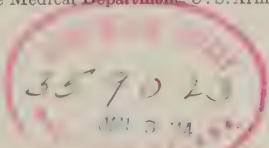
How the chief surgeon continued to coordinate the activities of the Medical Department attached to organizations in active operation is separately considered in the next chapter. At this time the intention is briefly to indicate only the more important changes of the organization of the American Expeditionary Forces as a whole, in order that an interpretation of the following outline of the organizations of the Medical Department, American Expeditionary Forces, might be facilitated. For details connected with this organization table see Appendix, p. 1054.

TABLE 4.—*Final organization, Medical Department, A. E. F.*

Theater of operations.	Zone of the armies (G-4-B representing the chief surgeon).	Army (army surgeon).	Medical Department personnel on duty with army troops.
			Consultants in special subdivisions of surgery and medicine.
			Sanitary train (commanding officer):
			Ambulance company section.
			Field hospital section.
			Camp infirmaries.
			Divisional medical supply unit.
			Evacuation hospitals, including Red Cross.
			Mobile hospitals.
			Evacuation ambulance companies. ¹
		Corps (corps surgeon).	Hospital trains.
			Mobile laboratory.
			Mobile veterinary hospital.
			Army supply park (medical supply depot company)
			Convalescent depot.
			Medical Department personnel on duty with corps troops.
			Consultants.
			Sanitary train (commanding officer):
			Ambulance section.
			Field hospital section.
		Division (division surgeon).	Camp infirmaries.
			Divisional medical supply units.
			Mobile hospital.
			Mobile veterinary hospital.
			Medical Department personnel on duty with division troops.
			Sanitary train:
			Ambulance section.
			Field hospital section.
			Camp infirmaries.
			Divisional medical supply unit.
		Sections of Services of Supply (chief surgeons of sections).	Mobile laboratory.
			Mobile surgical unit.
			Sanitary squads.
			Medical supply depots (base, intermediate, and advance).
			Hospital centers:
			Base hospitals.
			Convalescent camps.
			Supply depots.
			Base hospitals.
			Trains and barges.
		Services of Supply (chief surgeon).	Casual camp for sanitary troops.
			Medical Department concentration area.
			Fixed laboratories.
			Field laboratories.
			National Red Cross units.
			Sanitary inspectors.
			Consultants (professional).
			Veterinary hospitals (base).
			Mobile operating unit.
			Aviation medical unit.
		Special units.....	Aviation ophtho-otological unit.
			Medical classifying unit.
			Museum unit.
			Röntgenological unit.
			Ophthalmological unit.
			Medical Department repair shop unit.
			Central optical unit.
			Neuropsychiatric unit.
			Rodentological unit.

¹ Sections of the U. S. A. A. S. were also used for the evacuation of the sick and wounded.

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CHAPTER II

GENERAL DIRECTION OF THE MEDICAL SERVICE, THEATER OF OPERATIONS

CHIEF SURGEON, AMERICAN EXPEDITIONARY FORCES

By referring to the Appendix of this volume (p. 1026) it will be seen that the pre-war plans for the organization of the Medical Department in the theater of operations contemplated that the chief surgeon of a field army, as a member of the technical and administrative group of the staff of the commander, act, in general, as an advisory officer, administering directly only the limited personnel of the Medical Department attached to headquarters. Under these conditions—that is, during the period of grand tactical operations, when a line of communications would be functioning—he was to concern himself only with the broad principles underlying Medical Department administration, without maintaining an office of record. The office of record was to be that of the surgeon, base group (line of communications).¹

The chief surgeon, A. E. F., shortly after his appointment as an original member of the technical staff of the commanding general of the American Expeditionary Forces,² organized his office so that it comprised the following divisions:³ Hospitalization, sanitation and statistics, personnel, supplies, records and correspondence, and gas service.

To the chief surgeon, line of communications, was given immediate charge of base hospitals, supplies and Medical Department personnel on duty in the line of communications.⁴

This arrangement of the general direction of the Medical Department, A. E. F., obtained until, as described in Chapter I, General Pershing effected certain changes in the organization provided for by Field Service Regulations, and evolved a territorial rearrangement of the theater of operations in France by which the zone of the advance became a part of the line of communications, the whole being merged in the Services of Supply. Thereafter, the chief surgeon, A. E. F., was geographically detached from General Headquarters, and many of his duties were performed by deputies with the general staff.

The conduct of the affairs of the chief surgeon's office, in so far as his office concerned the Services of Supply, will not be discussed in this volume.^a However, there were certain activities of the Medical Department which straddled both the zone of the armies and the Services of Supply. Because of this fact, and especially because of the intimate relationship of the activities

^a See Volume II. Administration, American Expeditionary Forces.

remote, being not direct but through the representatives whom he left at Chaumont attached to the first, fourth, and fifth sections of the general staff. The medical officer associated with the first section was charged with supervision of ocean tonnage, requisitions, replacements, welfare work, and similar duties in so far as they affected the Medical Department; those with the fourth section were in charge of Medical Department supplies, construction, transportation, hospitalization, evacuation of the sick and wounded, and assignment of all Medical Department units newly arrived in France; while the medical officer with G-5 supervised the training of Medical Department personnel. No representatives were assigned to the second (intelligence) or third (operations) sections, chiefly because of the great shortage in the Medical Department personnel at the time.⁶

It soon became evident that medical representation on G-2 was not necessary, but as to G-3, it appeared desirable, though no medical officer was assigned thereto, that there should be such representation in order that Medical Department plans might be coordinated with combat operations in general.

As events developed and American troops began actual participation in the war, it was soon apparent that no medico-military operations could be planned or undertaken without consultation and fullest cooperation with the assistant chief of staff, G-4. It was the policy of this officer consistently to take the medical representative of his section into his confidence. The wisdom of so doing was amply demonstrated, and it was equally well demonstrated that without this harmonious cooperation Medical Department service in the field would have been doomed to failure. The stand of the assistant chief of staff, G-4 was particularly to be remarked for the reason that so few of the high ranking officers of the general staff appeared to appreciate that the Medical Department, if it were to accomplish its mission, must have knowledge of the general plan of combat activities.⁶

Being in immediate touch with all combat troops, the senior medical officer with G-4 carried out, as deputy of the chief surgeon, A. E. F., the policies of the latter and supervised Medical Department activities in the zone of the armies. Gradually almost all of the activities of the Medical Department at general headquarters were concentrated under him, and as he was head of the group under G-4, known as G-4-B, this group soon became the center to which matters affecting the Medical Department, whether arising at General Headquarters or referred to it, were in turn referred for recommendation and action. The composition of G-4-B varied according to circumstances, but usually included four medical officers of field rank, and two officers of the Sanitary Corps charged with office management.⁷ Two of its members were almost constantly in the field representing G-4 in the coordination of hospital and evacuation services. A large clerical force assisted in the performance of office duties. G-4-B submitted questions of policy to the chief surgeon, A. E. F., before ruling on them and thus continued actually to represent him.⁶

Much of the time of this group was taken up with Medical Department problems incident to combat. As the assistant chief of staff, at the head of G-4, kept the medical group of the section informed concerning plans for impending military operations, it was able to assist the surgeons of the various armies, corps, and divisions concerned in preparing for coming needs and to meet them when they arose. To a large degree this section prepared the plans for procurements, hospitalization, and evacuation utilized during the St. Mihiel and Meuse-Argonne operations, and put them into effective operation through personal consultation with the chief surgeons of the First and, later, the Second and Third Armies.⁸ It estimated the number of battle casualties which would require care and drew upon every available resource to make due provision for them. Owing to limited resources it frequently became necessary to move sanitary formations and supplies from one sector to another, but as G-4 controlled all transportation facilities, the affiliation of this group therewith assisted materially in these movements. All changes of station of army Medical Department units were carried out on orders issued by G-3, based on recommendations prepared in G-4-B for the signature of the assistant chief of staff, G-4. From a practical standpoint, therefore, G-4-B supervised battle disposition of sanitary units as dictated by military necessity, and eventually thus discharged the important functions of the chief surgeon of a group of armies.⁹

In the early, formative stage, before our First Army was organized, this group, G-4-B, also provided for hospitalization, evacuation, and supply in the immediate rear of separate divisions and corps. This service had not, it is true, been contemplated in the organization of the general staff, but under the circumstances it could be discharged by no other agency, though it placed a very heavy responsibility on the medical group in question.⁸

Thus, it was to effect and supervise hospitalization, evacuation, and supply in rear of the 1st Division that one of the members of G-4-B was sent to the Cantigny sector in May, 1918.¹⁰ Later he went to the Chateau-Thierry region to perform the same service for the divisions and corps in the Marne area. This, it should be understood, was before this same officer was detailed as chief surgeon of the Paris group, as American divisions operating in that area were later designated.¹⁰ With the appointment of corps and army surgeons, in the summer of 1918, G-4-B was gradually relieved of this part of its duties, but even after the formation of corps and armies it continued to exercise very careful supervision over Medical Department activities at the front.

The efficiency of the supervision exercised by G-4-B was greatly facilitated by the geographical location of Chaumont (G. H. Q.) and its excellent system of telegraph and telephone communication which made it possible for the medical group to learn quickly of needs and very rapidly to move army hospitals, ambulance companies, operating teams, and other formations from one sector to another. Without the machinery for coordination of effort and consolidation of resources, the care and removal of battle casualties would have been well-nigh impossible because of the limited Medical Department personnel and other resources available.¹¹

MAINTENANCE OF CONTACT BETWEEN FRENCH AND AMERICAN MEDICAL SERVICES

From the outset of American activities overseas the French stressed the necessity for maintaining contact, or liaison, a need which was not fully appreciated at first by some American officers, but which rapidly became more apparent to all, especially after American divisions were placed under French command in March, 1918. Such contact, as affecting the Medical Department, was maintained through a designated officer of G-4-B and a subdepartment known as the Franco-American section of the office of the French under-secretary for the medical service.¹² An experienced medical officer had been selected by the French Minister of War to handle all matters affecting the relations of the two medical services, exclusive of those pertaining to the zone of the armies. At Chaumont the French high command established a military mission, which included a medical section. This office handled all questions of mutual interest affecting medical services in the zone of the armies. The same American medical officer who maintained contact for our Medical Department also performed like services with the French military mission at Chaumont in matters affecting cooperation of the medical services of French and American forces in the army area.¹²

CONTROL EXERCISED BY G-4-B OVER EVACUATIONS BY HOSPITAL TRAINS

The fourth section of the general staff, General Headquarters, was the supply, coordinating, and evacuating section. It was specifically charged with the supervision of hospitalization and evacuation of the sick and the wounded.⁵ Its instrument of control over the movements of hospital trains evacuating sick and wounded was the regulating station.

COORDINATION OF HOSPITALIZATION AND EVACUATION

The first departure from static to mobile warfare devolved upon the 1st Division, which, in April, 1918, had been hurriedly withdrawn from the Toul sector and placed at the disposition of the French in reserve behind the Montdidier salient.¹³

Before May 28, when this division conducted the Cantigny action,¹³ G-4-B had received notice of the impending attack and had sent a member of the group to that front for the purpose of providing hospitalization and supply in rear of the division.

At this time our divisions were absolutely under French command. Not only was the evacuation and hospitalization of our wounded in the rear of the divisions a duty of the French, but this was the case with the medical supply of the divisions as well.¹⁴ As it soon became apparent that this arrangement was not workable, it devolved upon the representative of G-4-B to play an important part in securing uninterrupted supply for divisions widely scattered along the front.¹⁵ It was in this operation that the medical group with the 4th section of the general staff first adopted the plan of sending one of its members to represent it in all important field operations. Application

of this plan secured very effective coordination, as the representative had a freedom of action and latitude which could not have been exercised by an officer attached to the operating forces. He kept in close touch with G-4, G. H. Q., by telephone or telegraph, and also with the officers in charge of the hospitals to which he directed evacuations, usually making his headquarters with the office of the French corps or army with which our troops were incorporated. The value of his services was increased by the fact that hospital trains operated under jurisdiction of G-4.¹⁶ During quiet periods he returned automatically to headquarters and resumed his office duties.

With the beginning of the Aisne offensive by the Germans, in the latter part of May, 1918, when the 1st Division was on the front near Montdidier, it became necessary hurriedly to throw in other American divisions on the enemy front before Paris. The first American divisions to be used in the respite of this offensive were the 2d and 3d.¹⁶ At the height of our activities in the Marne area nine American divisions were intermittently engaged,¹⁶ thus creating a new hospitalization and evacuation problem. The French had lost many evacuation hospitals in their retreat from that region and therefore were not in a position to assume the additional burden of caring for American casualties. They now not only permitted but also assisted in evacuating from them by means of French and American trains to fixed American formations in the rear.¹⁷ There was no army hospital available in rear of the divisions and no organized machinery higher than a division to effect evacuations. To meet this emergency, as stated elsewhere in this chapter, a medical officer, representing G-4-B in the field, was charged with the duties of a chief surgeon of the divisions scattered through the area. In this capacity he submitted recommendations for coordination of the medical service to the medical group with G-4 and actively conducted the evacuation service in rear of the divisions.¹⁸

Our evacuation hospitals, which were gradually brought up, did not have the necessary mobility to meet changing military conditions existing at that time, chiefly because of shortage of motor transportation. Divisions were withdrawn hurriedly from one part of the line and thrown into another part alongside the French without advance notice to the medical representatives in the field and, at times, evidently without due notice being furnished the tactical headquarters of the "Paris Groupe," then established at La Ferté-sous-Jouarre and under which all American divisions in the Marne area were operating.¹⁷ Not until our troops were massed on the true Chateau-Thierry salient were we able to utilize our limited hospitalization and evacuation facilities to maximum advantage, and even then only by careful husbanding of inadequate resources and by working insufficient personnel to the limit of human endurance.¹⁹ By the work of this personnel day and night, often without proper rest, and by operating hospital trains, ambulances, and trucks to their maximum possibilities, the representative of G-4-B was barely able to meet requirements. Reserve personnel and hospitalization were withdrawn from any organization from which they could be spared and sent to that area for duty.¹⁹

The early phase of battles in the Marne salient found us confronted by shortage not only of personnel and hospital equipment but also of trains and ambulances. Evacuation into Paris, where our nearest fixed hospitals were located, from 40 to 100 km. (24 to 62 miles) distant, was effected at first by ambulance, or, if need be, by truck, until the railroad situation permitted the use of hospital trains which G-4-B had garaged near that city to meet this emergency. After railway service was established, evacuation was regulated from the station at Creil and later at the more centralized station at Le Bourget.¹⁸ Evacuations were effected at first by means of French and later by American hospital trains, our arrangements being intimately identified with those of the French and utilizing their lines of communication.¹⁸

In the early part of operations in the Marne area, G-4, of the Paris district, requested trains, sometimes in anticipation of needs, by telephone call to the regulating station. Because of faulty telephone communication between G-4 and the evacuation hospitals, this system proved unsatisfactory and was corrected later by having evacuation hospitals telephone their bed status direct to the regulating officer. That officer received daily from the chief surgeon of the Paris district a telephoned report of the bed status in that city, and after July 24 he also received from the chief surgeon, A. E. F., daily notification of the bed space in base hospitals in other parts of France. Eventually, the regulating officer at Le Bourget had under his control 17 American, 3 British, and 35 French trains which were operated quite constantly, French trains being inadequate even for French evacuations.²⁰

Following the reduction of the St. Mihiel salient, the greatly augmented American First Army began preparations for further and, as it proved, final combat activities in the Meuse-Argonne operation. The Medical Department still faced critical shortages in equipment, personnel, hospitalization, and ambulances.²¹

During the entire progress of these operations a representative of G-4-B remained at headquarters of the First Army, Souilly, for the purpose of coordinating Medical Department activities, and other representatives of that bureau were frequently at the front.²¹

While the 2d and 36th Divisions were on detached service with the French Fourth Army in the Champagne sector, in October, 1918, they naturally became separated from the administrative and supply control of the American First Army, and it accordingly devolved upon G-4-B to arrange for their hospitalization, supply, and evacuation during this period. To effect this, 2 evacuation hospitals, 1 mobile hospital, 3 evacuation ambulance companies, and 1 medical supply unit were withdrawn from the First Army and assigned to the service of these divisions, with stations at Mont Frenet and La Veuve, until no longer needed. They utilized tentage exclusively, were located on two French sidings installed for serving French evacuation hospitals at that point, and were entirely self-sustaining in every detail. Hospital trains for casualties arising in these divisions were furnished through the regulating station at St. Dizier and were regulated by the representative of G-4 stationed at the subsidiary regulating station at Connantre.²¹

Jurisdiction of G-4-B, General Headquarters, over the medical service of the American Second Corps was very different from that over other American field medical organizations on the Western Front. The corps was attached to British forces, who provided all the hospitalization required and supervised it exclusively, thus relieving G-4-B, General Headquarters of any responsibility therefor.²²

During the final phase of our combat activities, two divisions (37th and 91st) were detached from the First Army and sent to Belgium to cooperate with the French and Belgian forces in the offensives then taking place on that front.²² For these divisions a regulating station was established at Dunkerque. An evacuation hospital and a mobile hospital and two evacuation ambulance companies were sent by rail and established behind the divisions to care for American sick and wounded. Casualties, happily, were relatively few, although approximately 4,000 patients were received by these units within a brief period. The entire Medical Department activities, connected with hospitalization, evacuation, and supply, were supervised by a medical representative from G-4-B sent to that sector for the purpose.²²

Activities of G-4-B on the Italian front were practically nil. One regiment of Infantry (the 332d) had been detached from the 83d Division and sent to Italy. With this regiment G-4-B sent a fully equipped field hospital, with such additional X-ray and other surgical facilities as might be needed.²³ Extra surgical personnel was also attached to this unit. As forces in France were so short of ambulances, the chief of the United States Army Ambulance Service attached to the Italian Army was directed to provide the necessary ambulance facilities to meet the needs of this regiment. A base hospital, No. 102, was sent to Italy direct from the United States for the purpose of assisting the Italian medical department in the hospitalization of their casualties. With the arrival of our small force in Italy, authority was obtained from the Italian Government to admit to Base Hospital No. 102 such Americans as could not be hospitalized in the field hospital. G-4-B kept in close touch with the senior medical officer on duty with this regiment in order that his supply and other needs might be met. He established in Italy a small medical supply dump. To reinforce its surgical facilities, arrangements had been made with the American Red Cross to provide the medical organization, on duty with the regiment, a mobile hospital then at the disposition of the Red Cross in Italy. Combat activities of our troops in that country were so slight, however, it was not necessary to take advantage of this loan.²³

While en route through England, one regiment of Infantry (the 339th) and the 1st Battalion of the 310th Engineers were detached from the 85th Division and sent with the Allied Expeditionary Forces to western Russia. None of the details of hospitalization of that force were handled by the fourth section of the general staff, A. E. F. One field hospital and one ambulance company (337th) which accompanied the forces to Russia furnished all the hospitalization provided by the army throughout their operations there.²³

ADMINISTRATION OF THE SANITARY SERVICE OF THE DIVISION

It would be logical from one point of view to continue the consideration of the management of Medical Department affairs by taking up at this time that of an army, since, in the organization evolved in the American Expeditionary Forces, the army surgeon came next in sequence of importance and control, in so far as the Medical Department was concerned, to General Headquarters, and then the corps followed in due course. However, as the division was the great administration unit of our combatant forces when we entered the World War, and was, in consequence, organized first, it was used largely, especially by the Medical Department, as an administrative model for the management of the affairs of the corps and armies which were organized later; therefore the division will be discussed first.

It should also be noted in considering the division that the basis for its Medical Department operation was originally the Manual for the Medical Department.

The administration of the sanitary service of the division in a theater of operations, as outlined by the Manual for the Medical Department, is given in Appendix I. However, many departures from this plan, which obtained at the beginning, were effected during the course of the war. Some of these departures were directed by official promulgations; others came about through the adoption of methods used in foreign armies, or as the result of necessity.

One of the first changes in the organization of the Medical Department of the division which had a bearing on the conduct of its affairs was the provision of a sanitary train commander.²⁴ This, though it did not relieve the division surgeon of any ultimate responsibility for the operation of the sanitary train, divorced him from a relation with it that had been likened to that of a regimental commander, thus affording him more time for the direction of the activities of his department as a whole.

With the division as the administrative unit, it was the duty of the division surgeon to make definite recommendations concerning the announcement in the battle order of the location of dressing stations and of field hospitals. With the organization of the corps, however, control of the locations of division field hospitals was, in some instances, taken by corps headquarters.

The equipment of the field hospitals, when they arrived in France, was similar throughout. To meet the conditions which existed in France, it was found necessary to make additions to this equipment. It was likewise necessary to increase the personnel of these units to enable them to carry on the specialized form of treatment required in field hospitals during the World War.²⁴

The most important of the changes in the equipment of the field hospitals was the addition of surgical equipment to one in order that it might function on a larger scale as a surgical hospital to care for seriously wounded, including the injured classed as nontransportable. To one of the other hospitals was added the equipment for the treatment of gassed patients.²⁴

The operation of these specialized hospitals required the provision of teams of personnel, highly trained to function in their specialty in the most expeditious manner. These teams, comprising surgical, shock, splint, gas, and other teams, were usually organized from the personnel of the field hospitals themselves or were obtained from other Medical Department units of the division. When a mobile surgical unit was attached to a division field hospital, during active operations, the personnel of that unit was likewise attached to the divisional Medical Department for the time being.

With the specialization of the field hospitals there was evolved what might be called a normal distribution of the four field hospitals of the division, especially after the type of warfare in France had changed from trench to open. The open warfare was the character of warfare with which the American Expeditionary Forces was mostly concerned. Bearing in mind that the terrain usually determined the tactical distribution of the field hospitals, the chief requirement in making this distribution was found to be to provide for the following classes of sick and wounded: Seriously wounded; slightly wounded; gassed; and the sick, including the contagious sick and those with war neuroses.²⁵

In each division there was established a triage (sorting station) for the reception, classification, and distribution of those being evacuated.²⁵ At each triage the specialist medical personnel was stationed, especially the psychiatrist, orthopedist, gas medical officer, and other medical officers who possessed the soundest medical and surgical judgment in the division.²⁵

The triage had long been an established feature in the organization of the French Service de Santé. It was universally adopted by the American Expeditionary Forces.

An advanced triage was occasionally established at what was planned, by the Medical Department, to be the ambulance company dressing station—an institution that had little employment on the Western Front.²⁵

The sorting of casualties was done, naturally, wherever practicable, by any medical officer through whose hands the casualties passed. The term triage, however, generally referred to the one or more field hospitals established for the specific purpose of effecting a logical sorting of the wounded.²⁵

Because no general instructions were ever issued requiring a uniform distribution and employment of the field hospitals of the division,²⁵ and especially since there was a lack of personnel in the Medical Department that had been well grounded by similar training, there was a diversity of administrative arrangements in our divisions that was limited only by the number of divisions employed. This lack of uniformity was overcome, in a measure, when the corps and armies were organized and there was opportunity for coordination. This coordination resulted in what came to be known as a normal distribution of the field hospitals in the area of a division.²⁵ The normal distribution varied, dependent upon whether the division was actively engaged, holding a position in line but not on an offensive, or whether it was in line in a quiet sector or in training.

When the division was in line and actively engaged, three field hospitals were used as a triage for the wounded, gassed, and medical cases. Here the patients were classified as being nontransportable, transportable sitting, and transportable lying. One field hospital was held in reserve, such portion of its personnel as necessary being used to augment the triage or sometimes for other purposes. Under such conditions as those outlined, the main considerations were the treatment of the wounded and the gassed, and the maintenance of the mobility of the hospitals. In effecting a forward movement of the hospitals, the hospital held in reserve was habitually used to open a new triage before the old one was closed.²⁵

A large number of cases were received into the divisional triages classified as "war neuroses" varying in degree from the pronounced psychoneuroses—so-called "shell-shock" cases—to those that were in fact shell fright, gas fright, hysteria, mental and physical fatigue, malingering, and cowardice.²⁶ There were few of the last named, but the situation in having to differentiate all these seriously complicated the problems of evacuation. After unfortunate experiences up to and including the St. Mihiel operation, during which many cases not requiring evacuation were unnecessarily evacuated to base hospitals, a plan for their more effective control, retention, and care was put into operation. This was based on careful examination and classification by the divisional psychiatrist at the triage, the retention of mild cases within the division, and the transfer of others to special neurological hospitals established by the army and conducted by specially trained personnel.²⁶ The result of this method was the return to duty of 65 per cent of the cases which reached divisional hospitals and the transfer of 35 per cent to the army neurological hospitals.²⁶ Of this latter group, 57 per cent were returned to duty and 43 per cent were evacuated by special ambulances or busses (to avoid mental contamination of the actually wounded from association) to Neurologic Base Hospital No. 117, situated at La Fauche, in the advance section, Services of Supply; i. e., only 15 per cent of war neuroses were evacuated from the Army area. Of this number, in turn, 20 per cent were returned to duty, 73 per cent were classified for special kinds of service in the rear areas, and 7 per cent were evacuated to the United States as totally unfit for military duty.²⁶

When the division was in line in a quiet sector, or when it was training, one field hospital was used for triage and the treatment of the wounded and gassed, one for sick, one for men afflicted with skin and venereal diseases, and one was held in reserve to meet the demands of an epidemic, a gas attack, and for use in evacuating patients to be hospitalized in the rear, or to establish a convalescent camp. Under such conditions as these, the Medical Department of the division made every effort, consistent with the military situation, to retain with the division all patients except those requiring definitive surgical treatment, and the sick requiring prolonged treatment, or expert treatment in a more fully equipped institution.²⁷

As the motor transportation of most divisions was pooled and was assigned to field hospitals only when they were moved, it made little differ-

ence which field hospital was supposed to be animal drawn, as contemplated in Tables of Organization, No. 28, since moves were nearly always made by trucks assigned for the purpose.²⁴

ADMINISTRATION OF THE SANITARY SERVICE OF THE CORPS

COMPOSITION OF CORPS

The American First Army Corps was created by General Orders, No. 9, G. H. Q., A. E. F., January 15, 1918, with headquarters at Neufchateau, other corps being created later as troops became available. The organization of a corps was later modified so that at the time of the armistice it consisted of a permanent staff and corps troops and of those divisions which were temporarily under its tactical control. There also developed a geographic element in their limitation, for the corps sector was always accurately described, and as divisions moved in or out of the sector they simultaneously entered or left the corps. The number of divisions assigned to a corps, therefore, changed materially from time to time. On one occasion the Third Corps began the day with five divisions; that night there were four, only one of which had been present in the morning. During 24 hours there had been 9 divisions under the corps control.²⁸

When they first entered the lines, American corps were under the tactical command of the French or British, but eventually they operated under American command, except the Second Corps, which continued under the British in Flanders. Corps headquarters consisted of the commanding general, a general staff, and departments commonly termed the technical services. The Medical Department pertained to the first or coordinating section (G-1) of the general staff. Officers and personnel of corps headquarters were divided into two echelons—often stationed in different towns—the first consisting of the commanding general and the general staff sections, and the second of all other officers. In both echelons were officers of many different grades.²⁹

In the developmental stage of the corps, before it assumed tactical command, the corps surgeon was obliged to maintain liaison with his French colleagues in the same sector and army, for evacuation and hospitalization in rear of our divisions were then effected, to a certain extent at least, by them.³⁰ This arrangement did not always give satisfactory results, especially in the service of the 1st and 2d Divisions in their attack against Soissons. On this occasion the surgeon of the Third Corps to which these divisions belonged, was informed that the plan of evacuation was a military secret, and as the representative of G-4-B in that area likewise received no preliminary information, the hospital services of the French were not at first supplemented by any American units.³¹ In the Third Corps, as operations in the Marne area progressed, there was notable improvement in the evacuation service which the corps surgeon attributed in part to the training of all concerned in general staff work. The surgeon of the First Corps stressed the fact that the success of the corps medical service depended eventually upon the attitude of the assistant chief of staff, G-1, of the corps staff, under whom the

Medical Department functioned.³² The surgeon of the Third Corps attributed to the hearty cooperation of G-1, much of the success in evacuating the wounded. In this and the First Corps the surgeon received from G-1 full information and careful consideration of all his recommendations, and after conference with the chief of the section he wrote the paragraph of the administrative order pertaining to evacuation.³³

DETAILS OF ACTIVITIES, CORPS SURGEON'S OFFICE

Maps furnished the corps surgeon of the Third Corps were of two kinds, those which gave vague battle lines and approximate corps sectors, and those which were issued preparatory to a battle. The former, posted in the corps surgeon's office, gave accurate details of the location of Medical Department units of the divisions, corps, and army. The latter were absolutely secret, and though given the corps surgeon to study, it was ordered that their details should not be communicated to anyone.³⁴

Other maps, used and posted up to date, were one of the general battle-field on which battle lines were marked in charcoal so that they could be changed readily, and the corps circulation map, which indicated available roads and the regulations concerning traffic. Some 10 days before the beginning of the Meuse-Argonne operation the surgeon of the Third Corps was given a map showing in detail the phases of the coming battle, with a very full, written description of military plans. Only the day and the hour, designated as "D" and "H," respectively, were kept secret, and these were whispered to officers some time before the battle began.³⁴

Organization of the corps medical staff in the First Corps was so effected eventually that there was an officer corresponding to the head of each similar department in the division surgeon's office. As contemplated, and as later carried out, the organization was as follows:³⁵

Corps surgeon.—In charge.

Assistant corps surgeon.—In charge of corps troops, and in charge of office during the absence of the corps surgeon. Duties relative to corps troops were very similar to those of a division surgeon.

Executive officer.—In charge of office, and all records.

Corps sanitary inspector.—Sanitary inspector for corps troops, and supervision of the work of the division sanitary inspectors.

Corps consultant in surgery.—Supervision of all surgery done in division and corps field hospitals (which should be extremely limited); supervision of surgery in mobile surgical hospitals, when the latter were under the control of the corps surgeon as they should always be.

Corps consultant in medicine.—Supervision of medical care in the division and corps field hospitals, particularly supervision of shock work (his most important function in active periods).

Corps consultant in urology.—Supervision of the work of division urologists. Conduct venereal work and prevention and treatment of skin diseases for corps troops.

Corps consultant in orthopedics.—Supervision of division orthopedists. Conduct splint teaching for corps troops.

Corps consultant in psychiatry.—Supervision of the work of division psychiatrists; conduct psychiatric work for corps troops.

Corps medical gas officer.—Supervision of the work of the division medical gas officer. Conduct the same for corps troops.

Commanding officer corps sanitary trains.—Commands sanitary train of the corps; supervision evacuation of wounded in the various divisions; and conducts evacuation from field to evacuation hospitals.

Necessary clerks.

The specialist officers circulated constantly throughout the divisions constituting the corps, for the purpose of giving assistance wherever it was needed. Aside from the performance of their duties specified above they proved invaluable for keeping the corps surgeon constantly informed concerning all the Medical Department activities of the various divisions of the corps. Each specialist officer being carefully selected because of the knowledge he possessed of his branch of medicine or surgery, was able to give expert opinions on conditions found and sound advice for the correction of defects.

As it was not proposed that the office of the corps surgeon should be one of record, its clerical personnel and equipment in the First Corps were very limited. Retained records of all papers passing through this office were held in the files of the corps adjutant, where they were always available for reference, the corps surgeon's office keeping copies of a few important documents only.³⁶ In the Third Corps records were kept at a minimum, but a weekly sanitary report was required from all divisions and from corps troops, and from the same source was received by telephone twice daily (or oftener during battle) a numerical classified report of sick and wounded. In these latter reports promptness was regarded as being of more importance than was absolute accuracy. The accurate nominal lists, which came later were not prepared by the Medical Department. In the Third Corps, sick were classified as suffering from communicable or noncommunicable diseases, foot disorders, scabies and other skin diseases, and after November 1, 1918, reports of venereal diseases were required. Reports of communicable diseases gave the name of the ailment and the location of the case. Battle casualties were numerically differentiated as wounded, gassed, and psychopathic.³⁷

In the Fifth Corps the corps surgeon required the following information from division surgeons immediately upon joining the corps:³⁸ (1) Numerical list of medical personnel and transportation. (2) Roster of medical officers including specialists, dental, sanitary corps and veterinary officers. (3) Daily: Casualty report. (4) Weekly: Personnel and transportation (Form 9, A. G. O., S II). (5) Contagious diseases (for the allied commander). (6) Venereal (name, rank, organization, and number of each new case).

Reports required from corps were: Daily casualties and changes, adding number of cases evacuated direct to evacuation hospital.

In addition to the foregoing, the usual routine reports passed through the corps surgeon's office.

Originally, the office equipment of the Third Corps was that authorized for a division surgeon, but later was somewhat increased. It included, as its most important items, a box for maps and map-making instruments, another

which contained live records, and three typewriters. These, with the officers' bedding rolls and the men's equipment, were sent forward in charge of an officer when the office moved. During moves it was necessary to divide the office equipment into two shipments. Tables, chairs, and boxes of files gradually accumulated, the total weight of essentials amounting to about 600 pounds. A 3-ton truck provided for the office was more than adequate to move both the office and its enlisted personnel.³⁷

The chief functions of the corps surgeon in the evacuation of wounded were to systematize the operation of division triages, to supervise the location and operation of field hospitals, to evacuate those units, and to regulate the flow of casualties from them into the army hospitals according to the army plan of evacuation.³⁹ This plan was issued as part of the operations order of the army. As it was essential that he maintain close contact with the army surgeon or his representative in order to equalize evacuation into different hospitals in the army zone and to divert it from one to another in accordance with changing conditions, the corps surgeon assigned to a capable assistant the duty of maintaining such contact and of coordinating evacuation. This officer was designated in the different corps as the transportation, evacuation, or regulating officer, as the case might be. He maintained active liaison with division surgeons, on the one hand, and, on the other, with the chief surgeon of the army (through the army hospitalization and evacuation officers), who advised the army evacuation officer frequently during active operations concerning available bed space in army hospitals and the additional transportation on hand. In this way the routing of ambulances was directed to those hospitals best prepared to receive casualties at a given time. Courier service was maintained between corps and divisions and the army evacuation and mobile hospitals. Traffic regulators (traffic police) were posted at appropriate places along the roads leading from divisional triages to evacuation hospitals, and at night illuminated signs directed the ambulance convoys.⁴⁰ Corps sanitary trains, each consisting of four field hospitals and four ambulance companies, were authorized; but these trains were not actually available until some time after the organization of corps. It was their duty to clear field hospitals, if need arose to supplement the deficiencies of intradivisional resources, and to hospitalize those patients who could not endure the full journey to evacuation hospitals and those who would be fit for duty within a few days. Frequently, in the earlier operations, demands upon corps transportation were such that the quota of corps vehicles was inadequate: for example, in the First Corps, in the Marne area, when its ambulances had to make round trips 70 miles in length.⁴¹ Difficulties of the corps evacuation service were aggravated by the fact that, while the ambulance quota for a division was generally adequate in trench warfare, it was quite inadequate for an offensive and then needed reinforcements from the corps at the very time when, if the attack were successful, the distance which the corps ambulances had to travel progressively increased. Under such circumstances, unless reinforced by transport assigned by the army, and unless army hospitals were well advanced, many wounded had to be moved by trucks both in divi-

sions and in rear of them. The corps surgeon distributed his transportation where it was most urgently needed. At first there was no corps reserve, because of lack of vehicles, but when this need had been met his ambulance companies often served in rotation, if possible, in order that opportunity might be given for personnel to rest and to repair ambulances.

The field hospitals which formed a part of the corps sanitary train were utilized as convalescent depots (First Corps) or as rest or relay stations (Third Corps). As a rule they were located midway between division triages and the evacuation hospitals serving a corps.⁴² Surgeons of all corps emphasized the desirability of adding a mobile hospital to the corps sanitary train.

The surgeon, Fifth Corps, reported that during the Meuse-Argonne operation no division entered that corps with its full quota of ambulances or with anything approaching the allowance of trucks for field hospitals or of motor cycles or motor cars.⁴³ The corps sanitary train, authorized by Tables of Organization, was lacking except that three field hospitals reported in the first part of November entirely without transportation at first, and with no cots, stoves, extra blankets, or tents for officers. At the beginning of this offensive four United States Army Ambulance Service and two French ambulance sections were attached to the corps, giving a total of 88 ambulances, of which about 74 were fit for service.⁴⁴ At the time, this allowance was adequate, but it became progressively less and less so as division triages advanced, a round trip eventually taking from 20 to 24 hours. Great difficulty was experienced in obtaining spare parts for vehicles.

Trains of the several corps were gradually increased as resources of any kind became available, until at the time of the armistice they conformed approximately or actually to the authorized quota.

There was some confusion, at first, in the corps evacuation service. There were several reasons for this. Division medical officers did not sort cases properly, but loaded into one ambulance patients who had to be distributed to several army hospitals. Ambulance drivers occasionally did not go to the hospitals to which they were sent, but went to some other than the one designated. Receipt of notification that certain hospitals were filled and that casualties, already en route, would have to be diverted to some other point, was belated.⁴⁵

The multiplicity of evacuation and special hospitals in the army area increased the difficulties of ambulance evacuation and caused confusion, delays, and waste of transportation. At one time in October, 1918, there were 11 hospitals in different places draining the front of one corps. Hospitalization facilities and the military situation often determined the location of evacuation hospitals, but experience during the Meuse-Argonne operation demonstrated the desirability of grouping them wherever practicable and condemned the establishment of separate institutions to receive special cases of casualties. The ideal arrangement, so far as evacuation was concerned, was reached when the number of evacuation points was minimized and evacuation hospitals were generalized, that is, prepared to receive all kinds of casualties.⁴⁶

One of the principal difficulties encountered in effecting evacuation from divisions was due to the fact that their evacuation methods were not standardized and that in order to promote coordination it was necessary to harmonize their different practices so far as possible. The difficulty was increased by the frequent changing of divisions in a given corps and by the fact that methods in different corps were often dissimilar. Thus, the First Corps required that dressing stations perform triage service for divisions,⁴⁶ while in the Third Corps this duty was performed at field hospitals.⁴⁷ Standing orders on this subject were issued in some corps, the First, for example.⁴⁸ Field hospitals of a division generally were located by the division surgeon after consultation with the corps surgeon; but in preparation for an offensive the original location usually was made by the corps surgeon because of his superior knowledge of supply points and road conditions.

In some corps, especially in the First, it was the practice to designate as evacuation officer the commanding officer of the sanitary train, and he was assisted by officers from this train, stationed at each division triage. The corps evacuation officer was thus kept constantly apprised of conditions in division field hospitals, on the one hand, and of those in army hospitals, on the other, and he was therefore in a position to route casualties to the best advantage. In addition, especially during periods of battle activity, the corps surgeon was in daily personal contact with the evacuation officer of the army and with division surgeons, and he visited daily, if possible, all the division triages. It soon became apparent that personal inspection of the location and operation of dressing stations and field hospitals was necessary to obtain the best results and the highest degree of coordination. Location of these by maps was less satisfactory than were results obtained by reconnoissance.

Evacuation methods utilized by different corps varied considerably, not only one from another but also in a given corps at different times, on account of mutable conditions. The following memorandum order, covering the evacuation of sick and wounded, was promulgated in the First Corps as a means of standardizing the various methods of evacuation practiced by the divisions becoming parts of the corps:

HEADQUARTERS FIRST ARMY CORPS,
3 September, 18—11.30 a. m.

G-1

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Memorandum: Evacuation sick and wounded.

The following plan of evacuation of sick and wounded for each division in the corps will be put into effect at once.

AMBULANCE DRESSING STATION

1. Ambulance dressing station: This will be placed at the farthest point forward where ambulances can be concentrated with reasonable safety. It should be on a good road, with shelter, if possible, and with water available. It will be established by the ambulance section of the division sanitary train. Care must be exercised that it be established at a point which will not interfere with traffic. It should be on a return road.

At this point, patients, brought in by litter or by ambulance from the front line, will be examined; dressings adjusted, and hemorrhage controlled, if necessary; antitetanic serum administered, if not already done; food and hot drinks given where permissible; shock treated when the patients' condition makes it necessary; and the patients placed under shelter while awaiting transportation to the rear.

A shock table will be installed so that patients needing shock treatment can be properly cared for. Patients in shock will be held, if military conditions permit, on the shock table until their condition permits transportation to the rear.

2. The ambulance dressing station will also be a triage. Patients will be sorted, placed in an ambulance, and sent direct to the appropriate hospital, the idea being to reduce to the minimum, handling of the patient from the time he is wounded until he arrives in hospital.

3. At this ambulance dressing station will be stationed the following medical officers in addition to the personnel of the ambulance section conducting the station: Division psychiatrist, division orthopedist, division medical gas officer, and a medical officer with good surgical experience and judgment. Each of these officers should have an understudy who can relieve him when necessary to secure rest or food.

4. The division psychiatrist will examine all cases of shell shock, simulated shell shock, and other nervous conditions that may pass through this station. He will return to the front such patients that he considers fit for duty and to the rear those requiring hospitalization.

5. The division orthopedist will examine all patients with fracture and joint injuries and will see that all such are properly splinted before being sent to the rear.

6. The division medical gas officer will examine all gassed patients, returning to the front line all deemed fit for duty. He will return to the rear all that require hospitalization. He will also supervise the preliminary gas treatment at this point. Bathing facilities will be provided so that mustard gas patients will get the earliest possible attention and thus prevent subsequent burning.

7. The medical officer with good surgical experience and judgment who is selected for duty at this point will examine all wounds and direct to which hospital each wounded patient will be sent. The wounded will fall under one of three heads: (a) Very slight, who after the necessary dressing and antitetanic serum will be able to return to the front for duty; (b) nontransportable wounded, who will be sent to the field hospital designated for that purpose; and (c) all other wounded, who will be sent to the nearest evacuation hospital.

8. In past experience during open warfare, it has been found that large numbers of men return from the front diagnosed as shell shock or gas casualties. The great majority of these men present neither of the above conditions, but are simply exhausted, mentally and physically. They are disabled for the time being, but should not be sent to evacuation hospitals. They must be held in divisional sanitary organizations, given the necessary food, a bath when possible, and an opportunity to thoroughly rest. It will be found that within one to four days they will be able to return to full duty at the front, thus saving a very marked loss of man power when the maintenance of the man power of a division at its full strength is most important. Any such subsequently developing serious symptoms will at once be transferred to an evacuation hospital.

9. During active operations when the number of casualties becomes very large, it will be found that the available ambulance transportation will be entirely insufficient to carry all wounded to the rear and to prevent congestion of wounded in the front areas. It therefore is necessary for division surgeons to maintain liaison with the division motor transport officer and to secure the use of as many trucks as possible to carry back slightly wounded and gassed patients. Severely wounded and gassed must be carried in ambulances only. The corps surgeon will give every possible assistance to division surgeons during such periods of stress and will utilize for this purpose all available ambulances within the corps.

10. Close liaison must be maintained in the division between the director of the ambulance company section and the director of the field hospital section of the divisional

sanitary train. The commanding officer of the sanitary train under the supervision of the division surgeon will see that this liaison is constantly maintained. It is particularly important that the director of the ambulance section know immediately when any change is made in the location of a field hospital so that ambulances may be properly directed. Otherwise much confusion and loss of valuable time will result.

11. The station of the director of the ambulance section, divisional sanitary train, will normally be at the ambulance dressing station; of the director of field hospitals at the place where the field hospitals are grouped.

12. Roads in the vicinity of the ambulance dressing station and of the field hospitals will be plainly marked so that litter bearers and ambulance drivers may locate them without trouble. The divisional assistant provost marshal will be kept advised of the location of all sanitary units and of any changes made so that the military police will be competent at all times to give necessary and intelligent instructions as to their locations.

FIELD HOSPITALS

1. Field hospitals will be utilized as follows during periods of activity. This applies particularly to open warfare where rapid changes are probable. In sector warfare which is practically stationary, location of field hospitals need not follow this plan absolutely, especially as to location, which will be determined by the terrain, buildings available, proximity of evacuation hospital and other considerations.

2. The four field hospitals of a division will be placed together if conditions of the terrain permit. They will always be plainly marked by the Red Cross emblem in order to protect them from enemy fire. Placing the field hospitals together has been tested in actual open warfare and found to have certain definite advantages.

(a) They are much more easily located by ambulance drivers. If located at separate points depending upon the character of service they are intended to furnish, ambulances are apt to wander about and have great difficulty in locating their particular hospital. This, of course, is especially true in new country with which drivers are not familiar.

(b) The administration of the hospital is much simplified by being concentrated at one point.

(c) Assistance from the field hospital in reserve is always immediately available for whichever unit may have need of such assistance.

The field hospitals should be placed as close to the ambulance dressing station as is reasonably safe.

3. The field hospital will be utilized as follows: (a) Gas hospital, (b) hospital for nontransportable wounded, (c) hospital for minor sick, including skin and venereal diseases, and (d) one hospital in reserve.

4. Gas hospitals: One field hospital will be utilized as a gas hospital. To this hospital will be sent from the triage all patients who have been gassed. Therefore, facilities must be provided to give them the necessary special treatment required—proper bathing, alkaline treatment, administration of oxygen and, if necessary, venesection. As soon as the necessary treatment has been given and their condition permits, such patients as require further hospitalization will be sent to the nearest evacuation hospital. However, during open warfare, it will be found as noted before that the majority of gassed patients or the so-called gassed, will not require anything beyond a few days' rest, sleep, and food. These must not be sent to evacuation hospitals but must be retained until fit for duty (provided this does not require more than four days) and then returned to the line. At this hospital, there will also be installed a shock table for the treatment of those needing shock treatment at this point.

5. Hospital for nontransportable wounded: One field hospital will be utilized for the care of nontransportable wounded. This hospital will be supplied with surgical teams, female nurses and an X-ray outfit in order that proper surgical treatment and care may be given these cases. To this hospital will be sent direct from the triage only patients whose transportation farther to the rear will probably mean death. In past experiences these have usually comprised three classes: (a) Sucking chest wounds, (b) perforating abdom-

inal wounds, and (c) severe hemorrhages. Patients with heart and spinal conditions stand transportation better before operation than after, and should, therefore, not be stopped here. There has been a tendency in the past to retain at this hospital the seriously wounded who, however, would be able to stand transportation to the evacuation hospital. This must be discontinued. Only such patients will be retained as are actually nontransportable. When available, the corps surgeon will detail to each division an assistant consultant in surgery, who will be the sole judge of what cases will be operated at this hospital and what cases will be transferred to the evacuation hospital. A shock team will be on duty at this hospital for treatment of all shock cases both pre and post operative.

6. Hospital for minor sick including skin and venereal diseases: To this hospital will be sent only patients with minor conditions who will be fit for duty within four days. All seriously sick must be sent to an evacuation hospital at once. This includes the minor sick sent to this hospital who later develop serious symptoms. During active operations, patients with venereal diseases, except those having disabling complications, such as orchitis, epididymitis or cystitis, or who are in the infectious stages of syphilis, must be retained for full duty at the front.

7. One field hospital in reserve: This will be used to give assistance where needed both in personnel and equipment. A detail of 1 medical officer and 10 enlisted men will be sent to the ambulance dressing station to give the necessary preliminary bathing and alkaline treatment to patients with mustard gas burns as may be deemed necessary by the division medical gas officer on duty at this station. This detail must of course be relieved by another similar detail at regular intervals to allow the former to secure the necessary rest and food.

8. It must always be borne in mind that divisional hospitals must be as rapidly cleared as is possible in order that they may be mobile at all times. Necessarily, a hospital for nontransportable wounded must be more or less immobilized, but it also must be evacuated as rapidly as the condition of the patients will permit so that it, too, may advance with the troops when occasion requires. The corps surgeon will give the necessary assistance in replacing the personnel and equipment of field hospitals with corps sanitary train units when such are available.

9. Exchange of supplies: It is of utmost importance that a systematic exchange of supplies—as litters, dressings, splints, blankets, hot water bottles, operating from the front line all the way back to the final hospital to which the patient is delivered, be instituted at once. When a patient is placed in an ambulance, the ambulance orderly must return to the litter bearers a duplicate of all supplies furnished the patient. Similarly, when the ambulance delivers the patient to a hospital, the ambulance orderly must get from the hospital a duplicate of all supplies furnished the patient. This must operate at every point where a change of transportation is made. Otherwise the supplies at the front-line positions will soon become exhausted and unnecessary delay and suffering will result. If this system of exchange is enforced, there is a constant steady stream of all necessary supplies going forward and there need be no interruption in the care given to wounded or other casualties.

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ADMINISTRATION OF THE SANITARY SERVICE OF THE ARMY

Organization of the First Army, with headquarters at La Ferte-sous-Jouarre, was announced to take effect on August 10, 1918.⁴⁹ On October 10, during the second phase of the Meuse-Argonne operation, the Second Army was created,⁵⁰ occupying that portion of the American front extending from Port-sur-Seille east of the Moselle to Fresnes-en-Woevre, southeast of Verdun.⁵¹ Plans had been made before the armistice for the organization of a Third Army, and after the armistice, on November 14, this was designated the Army of Occupation.⁵²

The army surgeon not only supervised and coordinated the Medical Department activities of corps, divisions, and regiments, but he also had at his disposition the following formations, varying in numbers according to resources and needs: An army sanitary train, mobile hospitals, special neurologic, gas, and contagious disease hospitals, ambulance companies, sections of the United States Army Ambulance Service, hospital trains of standard 1-m. and 60-cm. gauge, medical supply parks and "dumps," convalescent depots, field medical laboratories, sanitary squads, specialists, including consultants and epidemiologists, operating, shock, splint, and gas teams, radiologic groups, sanitary inspectors, attending surgeons, mobile degassing units, courier service, disinfection units for prisoners of war and repatriates, labor battalions, prisoners-of-war companies, the Medical Department concentration area, the medical group at the regulating station, and American Red Cross stations and supply parks in the army area.

ORGANIZATION OF THE OFFICE OF THE ARMY CHIEF SURGEON

War Department Tables of Organization provided for the following personnel of the Medical Department for the operation of the office of the chief surgeon of an army:⁵³ 1 colonel; 1 lieutenant colonel; 1 major; 1 captain; 1 sergeant, first class; 2 sergeants; and 8 privates, first class, or privates.

The experiences of the three armies which were organized in the American Expeditionary Forces differed materially; therefore the demands made on the Medical Department of each of these armies likewise varied. Consequently, the organization of the office of the chief surgeon of each of the armies differed.

The problems which engrossed the army chief surgeons were hospitalization, transportation, medical supply, sanitation, administration, professional supervision, and evacuation. These were all problems of considerable magnitude, and their immediate supervision could not be intelligently accomplished by one person.

As in the corps, the organization of the army chief surgeon's office had to be perfected with practically no precedent as a guide. The pioneer work in this direction was done by the first chief surgeon of the First Army, which, as has been seen, was organized August 10, 1918. In his preparations for the part which the Medical Department was to play in the St. Mihiel operation that took place within a month, the chief surgeon, First Army, so organized his office as to have the following heads of departments:⁵⁴ Assistant to the chief surgeon; medical supply officer; officer in charge of correspondence; statistical officer; sanitary inspector; supervising dental surgeon. On September 25, 1918, when the chief surgeon moved his office from Neufchateau to Ligny-en-Barrois, Meuse, and the strength of the First Army exceeded 1,000,000 men,⁵⁵ there were the following officers in the chief surgeon's office, additional to those mentioned above:⁵⁵ Motor transport officer; representative chief surgeon, at the front; assistant to director, ambulance service; 3 assistant medical supply officers. Though there were consultants in the special

subdivisions of surgery and medicine assigned to the First Army, the chief surgeon did not carry them as a part of his office organization.

In the development of the organization of the office of the chief surgeon, Second Army, it became necessary to expand the personnel to 20 officers in charge of the following administrative sections under his immediate supervision:⁵⁶

Hospitalization.—Direction and supervision of evacuation, mobile and special army hospitals, and mobile surgical units. Organization, supervision, and assignment of surgical, shock, and fracture teams, and auxiliary professional personnel. Control of hospitalization within the army.

Transportation.—Direction and supervision of all Medical Department means of transportation within the army, except that with army artillery.

Supply.—Medical, dental, and veterinary supply of division, corps, and army troops except initial equipment. Organization and administration of army advance medical supply depots.

Sanitation.—Supervision of sanitation of divisions, corps, and army; activities of sanitary squads; preparation of sanitary reports, control of epidemics, organization and administration of area sanitary service, control of army and mobile laboratories in conjunction with Engineers' Water Service.

Medical service of army troops.—Organization and administration of the medical service of army troops other than army artillery in the capacity of a division surgeon for these units.

Statistics and record.—Duties of personnel adjutant. Preparation of the statistical reports of Medical Department units as prescribed in orders. Organization and internal administration of the army surgeon's office. Records, reports, charts, returns, and correspondence of administrative and consulting sections.

Evacuation (G-4).—Medical representative on staff of G-4. Supervision of evacuation from the army and transportation of army hospitals in the army area. Action on medical requisitions in conformity with General Orders, No. 44, G. H. Q., A. E. F., 1918.

Medical consultant.—Supervision of clinical medicine in division, corps, and army hospitals. Selection and instruction of subordinate consultants and chiefs of medical services for army hospitals. Organization and supervision of shock teams. Adviser of chief surgeon concerning the professional service of the army.

Surgical consultant.—Duties similar to those of medical consultant.

Orthopedic consultant.—Duties similar to those of other professional consultants. Organization and instruction of fracture teams, distribution of splints and splint material, and instruction of Medical Department personnel in their use.

Neuropsychiatry consultant.—Duties similar to those of medical consultant. Cooperation with judge advocate in examinations contemplated by par. 219, Manual of Courts-Martial.

Urology consultant.—Supervision of clinical work pertaining to urology, dermatology, and prophylaxis of venereal and skin diseases, in a manner similar to the services of the medical and surgical consultants.

Medical gas treatment officer.—Duties analogous in this field to those of medical and surgical consultants. Supervision of instruction of all medical personnel in treatment and management of gassed cases.

Roentgenologist.—Supervision of clinical work and other duties pertaining to this specialty, including procurement and maintenance of fixed and portable X-ray apparatus.

Dental surgeon.—Supervision of dental service throughout the army, and, in cooperation with supply sections, distribution of dental supplies.

Attending surgeons and attending dental surgeons were attached to army headquarters and to headquarters troops.

Though plans had been made before the armistice for the organization of the Third Army, it was not until November 14 that this army was given a mission—the American army of occupation on the Rhine.⁵² Active hostilities had ceased, but, because of the plan for the advance of the Third Army, which was to follow up the retreating Germans, to see that the terms of the armistice were carried out by them, it was necessary to maintain as effective an organization for it as though hostilities were still going on. The organization of the office of the chief surgeon, Third Army, differed slightly from that adopted by the chief surgeon, Second Army. Beside the chief surgeon, there were in the former's office a chief dental surgeon, a medical supply officer, an officer in charge of hospitalization; consultants in medicine and surgery, a director of laboratories, an evacuation officer and representative of the chief surgeon; consultants in urology, ophthalmology, otology and laryngology, neuropsychiatry, and orthopedics; and an officer in charge of finance and accounting; a sanitary inspector; an epidemiologist; an officer in charge of water supply; an executive officer; an assistant to the chief dental surgeon.⁵⁷

Though all the several kinds of Medical Department formations under the immediate jurisdiction of the army surgeon were indispensable, the most important of these were regarded as the evacuation and mobile hospitals and the mobile surgical units and ambulance companies. These are discussed in Chapter V. Army hospitals received the wounded from the front, operated upon them if necessary and possible, prepared them for transportation to base hospitals, and placed them on hospital trains.

Evacuation from the army zone was hampered by the considerable number of hospitals provided, especially when these were scattered, for not only did their multiplicity tend to confuse incoming ambulance drivers and thus to delay delivery of patients at the proper destination, but it also made more difficult the coordination of evacuation from these army hospitals. It had been intended that evacuation hospitals should receive all classes of cases, but because of their inadequacy to do so despite their expansion, it proved essential that they be supplemented by other units, especially after the appearance of the influenza epidemic in the autumn of 1918.²⁶ The evacuation hospitals were distributed according to needs, roads, sites available, etc., and it was in order to facilitate coordination of evacuation from these scattered units that they were grouped into evacuation areas during the Meuse-Argonne operation.

No plan of evacuation, issued as part of a field order prior to an engagement, could automatically continue to meet changing conditions; nor was it practicable to issue a new order from army headquarters whenever the situation in the line, or in evacuation hospitals, demanded a change in the original scheme. Plans of evacuation quoted at various points in succeeding chapters express only general policies for collecting the sick and wounded into the army hospitals severally designated for the reception of different classes of cases—normal sick, contagious, seriously wounded, slightly wounded, gassed, and psychopathic. Execution of such plans required, of course, a coordinated division of labor.

All transportation belonging to the Medical Department of an army was pooled and operated and distributed under an officer charged with the evacuation ambulance service who was attached to the office of the army surgeon.⁵⁸ This transportation consisted of ambulance companies, evacuation ambulance companies, and all other motor transport assigned to the army for the evacuation of casualties. The transportation officer who was immediately charged with its control utilized it to evacuate corps and army hospitals, located off the railroad, to other hospitals from which railway evacuations were made, to reinforce the corps and division evacuation service, and in emergencies to transport Medical Department personnel (teams and nurses) changing stations.⁵⁹ Four or five ambulance companies and 10 sight-seeing busses were assigned to each corps in the Meuse-Argonne operation in addition to the corps quota, and an army reserve was established consisting of 7 ambulance companies and 30 trucks fitted for transporting the slightly wounded.

The policy was maintained for attaching sections of this army reserve, as needed, to the several corps for temporary duty. By this means the reserves were used where most required, were readily shifted, and after a period of hard service were withdrawn for rest of personnel and repair of vehicles.

Until a short time before the St. Mihiel operation, September 12, 1918, the system employed for evacuation of casualties from the zone of the armies was an adaptation of the system used by the French and was operated to a large extent through their facilities and with their aid. When, however, the First Army was organized and took over its designated sector, it adopted a definite system of its own which, operating over its own lines of communication, provided for the movement of casualties from the front to base hospitals. For the successful operation of this system it was necessary that there be close coordination between the activities of the Medical Department and those of the Services of Supply. This was effected through the agency of the general staff, which so far as possible centralized in one bureau information concerning the following subjects:⁵⁹ (1) Army hospitals: Location, number, capacity, number of operating teams, and number of patients classified in reference to their evacuability. (2) Hospital trains: Number, type, capacity, routes, and schedules in coordination with military activities and traffic. (3) Base hospitals, distance, available bed space, classified.

The machinery or organization of the system adopted required: (a) An evacuation officer, attached to G-4 of the army. (b) A regulating officer, in

charge of hospital train service, also operating under G-4. (c) A hospitalization officer, in the office of the chief surgeon, A. E. F.

Evacuations were coordinated by the Medical Department representatives with the fourth section of the general staff, one member of the group being charged with this duty and also representing here in such matters the chief surgeon of the army in the field.

Priority right in field telephone communication was secured and a medical officer was assigned to each corps sector, charged with the duty of collecting information concerning casualties and those to be evacuated and of transmitting it to the medical officer—an assistant to the army surgeon—who was attached to the fourth section of the general staff of the army concerned. This officer, charged solely with the evacuation of casualties, received twice every 24 hours the casualty reports of division, corps, and army troops by classes and the reports of army hospitals, with their statements of the number of casualties and empty beds. Upon these figures he based his reports to the army surgeon and his requests to the regulating stations for trains. His communication with the army surgeon and the regulating office was by telephone, as these officers were located at points having direct trunk-line communication.⁶⁰⁻⁶¹

The method above described, known as the second plan of evacuation, as determined and directed by General Headquarters, became effective on August 29, 1918; but though it was satisfactory in quiet periods, certain changes were found necessary in the active periods of an offensive, for then the situation in army hospitals changed from hour to hour, and a more automatic system, utilizing more frequent reports, was found necessary. It was essential that there be closer, more intimate contact between the army hospitals and the regulating officer. To effect this, the evacuation office of G-4, army, was decentralized, representatives taking station at evacuation centers.⁶¹ Each of these centers consisted of the army hospitals which, whether grouped or scattered in a certain defined area, were evacuated as an entity. The extent of these centers was determined by railhead facilities. Ambulance companies to carry patients to the railway sidings were distributed among the centers according to the distance of hospitals from their entraining points, their capacity, and the character of disabilities which they treated. At these centers reports could be received hourly, if necessary, and whenever possible such reports were telephoned by a preferred wire direct to the regulating officer. The area representative of the evacuation officer did not now call for a certain kind of train or for a specific number, but simply gave the number and type of cases to be evacuated and named the hospital or group of hospitals to be served.⁶¹ This close contact with the regulating station enabled the evacuating officer to control the stream of casualties and to divert it to the best advantage into the various army hospitals. This duty required the utmost diligence, for the hospitals' capacity was measured by the amount of their bed space, by their operating teams and evacuation facilities, and overtaxation of any of these would cause congestion or necessitate sending patients out on preoperative trains. When a certain limit was reached beyond which a hospital could

not, with its available operating teams, clear its patients within four hours. for instance, admissions were stopped and the stream of wounded was diverted to other hospitals.⁶²

The services of the evacuation officer, who supervised evacuations and coordinated them with other military activities, were supplemented by those of the army hospitals officer, who was in immediate control of evacuation, mobile and special hospitals, and mobile surgical units. This officer performed in the zone of the armies duties similar to those of the hospitalization officer in the office of the chief surgeon, A. E. F., at Tours, who controlled hospitalization in the advance, intermediate, and base sections. Thus he assigned and supervised surgical, shock, and fracture teams and other professional personnel, selected new sites for army hospitals, and supervised their opening, operation, and closing. During engagements he kept close watch over these units and maintained liaison with the corps surgeons in order to direct the flow of casualties according to changing conditions. In this duty he collaborated with the evacuation officer, with whom he was in constant touch. During the Meuse-Argonne operation the hospitalization officer in the First Army became assistant to the evacuation officer.⁶²

The plan thus developed eventuated in a simple but efficient system in which evacuations were controlled by one bureau.⁶¹ Kept informed of needs at the front and of resources at the rear, the regulating officer could send his trains to the best advantage in each direction. To meet normal daily needs, during the Meuse-Argonne operation (q. v.) a specified number of trains were sent daily to each evacuation center, and in emergencies other trains than those normally provided were sent upon call. But such special trains were relatively infrequent.

Arrangements for the hospitalization of casualties in the zone of the armies were preliminary to their further transfer, for definitive treatment, to base hospitals farther to the rear. These were located in the base, intermediate, and advance sections of the Services of Supply, while in the district of Paris were American Red Cross hospitals discharging similar duties. The area of the Services of Supplies covered all that territory of France which was not included in the zone of the armies or the district of Paris.

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CHAPTER III

COMBAT DIVISIONS IN TRAINING AND REST AREAS AND ON THE MARCH; DEPOT AND REPLACEMENT DIVISIONS

As stated elsewhere, the general organization project dated July 10, 1917, approved by the commander in chief, A. E. F., July 11, 1917, provided for the organization of the American forces, each army to consist of five corps and supplementary units, designated as army troops.¹

A corps was to have six divisions, four of which were to be combat divisions, one a replacement and school division, one a base and training division, and supplementary units designated corps troops. Provision was thus made for a replacement system of two echelons, each echelon to consist of a division from each corps.²

The function of a combat division is so well understood that no description is necessary. The function of the rear echelon, the corps base and training division, was to be the reception, classification, and preliminary training of troops arriving from the United States. The forward echelon, corps replacement and school division, was to receive replacements from the base division, to continue their training, to forward them to combat divisions, and to supply the troops for the corps schools.²

The provisions of the general organization project and the priority schedule, A. E. F., contemplated that the third division in each corps (or group of six divisions) to arrive in France should be the replacement division, and that the sixth to arrive should be the base division.³

The first four divisions to arrive in France were the 1st, 2d, 26th and 42d.³ However, the first division to be designated for replacement purposes was the 41st, which was the fifth division to arrive.³ It was at first intended that this division should become the replacement division of the First Corps, but during the period of its assembly at La Courtine it was determined to utilize it as the base division instead.⁴ The 41st Division was formally designated the base and training division, First Corps, January 15, 1918,⁵ which designation was changed to First Corps Depot Division, by telegraphic instructions from General Headquarters, A. E. F., March 5, 1918, to the commanding general, Service of the Rear.⁴

The necessity of providing the other echelon of the replacement system for the First Corps having been decided, the sixth division (32d) to arrive in the American Expeditionary Forces was announced as the replacement division of the First Corps.⁴ The portion of this division which had been assembled in the tenth training area functioned as a replacement depot only until the great German offensive, which began on March 21, 1918, led to the division being ordered into the line for training as a combat division.⁴ It ceased to function as a replacement division.

The military situation at this time also led to the training of all divisions of the American Expeditionary Forces, except the 41st, as combat divisions,

until the arrival of the 83d Division, which was designated as the 2d Depot Division on June 27, 1918.⁴

By the time 30 divisions had arrived in France, only 4 of them had been designated depot divisions.⁴ In all, there were seven depot divisions, 41st, 83d, 76th, 85th, 39th, 40th, 31st, though one, the seventh to arrive, never functioned as such.⁶ Except for the brief time when the 32d Division functioned as a replacement division, there were no replacement divisions.⁶

COMBAT DIVISIONS IN TRAINING AND REST AREAS

Combat divisions on arrival in France were assembled in training areas, where they received their preliminary instruction prior to going into the line.

When withdrawn from the line after combat, such divisions habitually moved to training or rest areas, where they received replacements, renewed equipment, and in some instances underwent intensive training.

LOCATION

Areas where American troops were trained (save for those divisions which served with the British) were located in the northeastern part of France, in the advance section, Services of Supply. In general terms it might be said that they were grouped around Neufchateau. Though they varied considerably in size and contour, most of them averaged from 250 to 300 square miles in area and were roughly quadrangular or elliptical; some were much smaller and a few were larger. Each contained from 30 to 60, usually about 50, small communities whose populations varied from less than a hundred to several thousand. In these communities and to a very much less extent in barracks, or in isolated buildings at a distance from the local communities, troops were billeted. The proximity of the communities in question varied considerably. In the Neufchateau area, generally speaking, they were from 1 to 6 km. apart (0.6 to 3.6 miles), but sometimes they were more, with the result that the troops were more widely separated.

BILLETING FACILITIES

As the billeting facilities of the average French town were very limited, our organizations were often necessarily scattered among a number of towns. Thus at one time the sanitary train of the 1st Division was quartered in four villages and the 53d Infantry Regiment was distributed among seven villages. The billeting of troops in individual buildings at a distance from communities added especially to dispersion. In training areas, troops occupied all available structures which afforded any shelter, such as public buildings, barracks, storehouses, barns, houses, lofts, stables, and sheds.⁷ The Field Artillery, e. g., the 20th, sometimes occupied gun emplacements and dugouts. In some commands, e. g., the 80th Division in the Samer area during June, 1918, shelter tents were used on any convenient site. Any barracks that were available in the area were taken over by our troops, for example, by the 1st Division in the Gondrecourt area, but relatively speaking such buildings were very few, especially when our troops first moved to the areas in question. Occasionally men were quartered in tents loaned by welfare organizations. Billeting facili-

ties varied considerably in the different areas, being reported as good in some and as poor in others. As rapidly as possible new buildings were erected, the Medical Department bending its efforts especially toward the construction of a camp (i. e., a class B) hospital in each area.

STAFF DIFFICULTIES INCIDENT TO DISPERSION OF TROOPS IN BILLETES

Usually the divisions arrived in successive increments, the staff reporting, as in the 26th Division, in small detachments, the last of which did not arrive until nearly a month after the first.⁸

Division artillery was sent for training to an area other than that to which the infantry was assigned. The earlier arrivals of each division, infantry or artillery, sought to make every suitable arrangement for the troops of their command which were to follow in the same area. Separate areas for infantry and artillery augmented appreciably the difficulties of staff service, including those of the Medical Department. Chief among its duties in the special circumstances were sanitation, procurement of supplies and transportation, provision of hospital facilities, care and evacuation of sick, perfection of organization of Medical Department formations, training of the same, and elimination from the division of all officers and men found physically unfit for combat. Sanitation and care of the sick usually proved of most urgent importance, but all the duties mentioned were prosecuted simultaneously. Sanitation of the training areas is discussed in the volume on that particular subject.

DEVELOPMENT OF MEDICAL DEPARTMENT PERSONNEL

Division surgeons had been carefully selected at home and were officers of experience, but their office forces usually consisted largely of personnel unfamiliar with many military details, though some organizations fortunately included commissioned and enlisted Medical Department personnel who had had experience in the National Guard or elsewhere. Thus in the 26th Division the office force had formerly performed the same duties for the surgeon general of one of the States whose contingent became a part of the division. Such men quickly learned their new duties, but there was a great and constant need for experienced noncommissioned officers. The problems confronting the newly arrived division surgeons were numerous and pressing; and though they differed somewhat in different organizations, there was great general similarity, especially in divisions which arrived in France at the same period of development of the American Expeditionary Forces.⁹

In our earlier overseas service, the armies and army corps had not yet been organized. The general staff, A. E. F., on the contrary, was organized, but it had not been developed, as it was later. It was still possible, however, then to call up the chief surgeon, A. E. F., at Chaumont, and thus to straighten out some of the constantly arising complications by direct conversation over the telephone.

While a division was in training there usually was a daily conference of its chief medical officers, including the consultants, and a weekly conference attended by all medical officers who could be present. The places where

the officers so congregated were changed frequently in order that they could inspect various parts of the division area. These conferences proved a convenient expedient for checking up what was being accomplished and for discussing many matters of mutual interest.

PROVISION FOR MEDICAL CARE OF TROOPS

Offices were established for the attending surgeon and the dental surgeon for the troops at division headquarters, but for the command at large medical attention was provided primarily by battalion surgeons. Battalion surgeons sent cases, requiring more thorough treatment than they could give locally, to a regimental infirmary or to a camp hospital. The number of infirmaries established varied considerably according to needs, geographic distribution of troops, and cognate conditions. Sometimes they grew to considerable size, as in the 39th Division during September and October, 1918, in the St. Florent area, each of whose three infirmaries expanded to 100 beds.¹⁰ For the 26th Division infirmaries were built in the Neufchateau area in the winter of 1917 in almost every village by an organization called "divisional areas," then in control of the training territories, and these housed a fairly large percentage of the sick.¹¹ In the Rimaucourt area during the winter of 1917 the 42d Division established a small infirmary in each village where troops were billeted. Sometimes, as in the 39th Division in the St. Florent area, infirmaries had to be extemporized, and because of limited hospital facilities this division treated in infirmaries cases which otherwise it would have transferred to hospitals.¹⁰ In this manner mild cases in the Artillery of the 90th Division were treated at Le Courneau in the fall of 1918, though sometimes, as in the 1st Division in the Valdahon area, a field hospital was provided for the artillery. Equipment for 17 infirmaries was requisitioned by the 39th Division to meet its needs in the influenza epidemic.¹⁰

ESTABLISHMENT OF CAMP HOSPITALS

In each divisional area a camp hospital was established which ordinarily was operated by one of the field hospitals of the division. Sometimes this personnel was augmented by details from other parts of the sanitary train whose companies normally were billeted in different towns. As rapidly as resources permitted, the personnel of these hospitals was replaced by other personnel assigned to them permanently. It was found that the detail of divisional personnel to such duties interfered seriously with their training and also detained them, to care for the sick left behind, when the division moved. This question has been discussed in connection with personnel in Chapter I. The camp hospitals were at first established in any buildings available such as hotels, factories, châteaux, or barracks, and as the capacity of these buildings usually was small it was sometimes necessary to have recourse to several hospital establishments in an Infantry area. As already indicated, the 39th Division found no buildings suitable for a camp hospital and was obliged, therefore, to develop its infirmary service and to send its

patients to three small hospitals in its vicinity until the camp hospital was constructed.¹⁰ The 26th Division operated as a camp hospital one of its field hospitals in barracks at Neufchateau during the winter of 1917 and a little later another at Liffol-le-Grand. The former, which grew to a capacity of several hundred beds, was taken over eventually by a base hospital.⁹ As rapidly as possible, a barrack camp hospital (type B) was constructed in each area, staffed by personnel permanently assigned thereto; but a number of divisions, especially those which first arrived, did not have the benefit of these facilities or had them only to a limited extent, though the Medical Department strained every resource to provide them.

Each of these units (type B hospitals) had a normal capacity of 300 beds, and facilities for a crisis expansion to 500.¹² Sometimes these camp hospitals were under construction when a division arrived; sometimes, on the other hand, they had not been started until the division entered the area. Several camp hospitals were established by some divisions; for example, the 1st Division while training in the Gondrecourt area operated one camp hospital at Gondrecourt for the majority of the division and another in an entirely different area at Valdahon where its artillery was located.¹³ Sometimes other and special hospital establishments were provided, such as a camp for venereal cases, or one for skin and venereal diseases.¹⁴

MEDICAL DEPARTMENT TRANSPORTATION

Until ambulances became available, which was not the case in the beginning, patients were sent to these camp hospitals in any transportation available, such as peasant wagons or motor trucks. Even much later, lack of transportation, especially in the presence of the epidemic of influenza, rendered transfer of patients difficult in a number of divisions.

Ambulances on receipt were distributed in a number of different ways. The 82d Division assigned one motor and one animal-drawn ambulance to each regiment or separate battalion and sent collecting ambulances which visited each battalion headquarters daily.¹⁵ In some divisions ambulances made daily visits to regiments; and, as was the case in the 85th Division, emergencies were met by sending ambulances on call.¹⁶ Liaison was maintained by runners if the telephone service was inadequate.

EVACUATION OF PATIENTS

From the camp hospitals patients were sent to any neighboring hospital prepared to receive them. Usually these were American base hospitals. Thus the 1st Division in the Gondrecourt area evacuated to Bazoilles 30 km. (18.6 miles) distant,¹⁷ the 2d Division sent contagious cases to Neufchateau, and special cases to Bazoilles, but later sent all its patients to the base hospitals at Vittel and Contrexeville.¹⁸ The 88th Division sent its sick to a French hospital, whose staff it reenforced by details from its Medical Department personnel, and the 90th to Field Hospital No. 42, to which it assigned some of its personnel for instruction.¹⁹

CLASSIFICATION OF OFFICERS AND MEN

A very important duty of the Medical Department in training areas was the classification of all officers and men of the divisions.

Under the provisions of General Orders, No. 41, G. H. Q., A. E. F., March 14, 1918, the classification was to be as follows: "A," for combat service; "B," temporarily unfit for such service but fit for other duty and potentially class "A" within six months; "C," permanently unfit for combat duty but not so disabled as to justify return to the United States; "D," those unfit for any duty with the American Expeditionary Forces. Classification of officers and men began as soon as a division entered its training area and continued until it was completed. Though efforts to eliminate all the unfit had been made while the divisions were in the United States, reexamination in France led to the transfer of hundreds of others including officers of both line and staff. Though the less efficient officers had been eliminated in the United States, some of them had accompanied the troops to France, often in the higher grades (26th Division).¹¹

Many mental defectives in troops had escaped the examining boards at home. The division psychiatrist aided greatly by picking out these men, for he frequently was called upon as a consultant in cases of exceptional difficulty. Sometimes he was a member of boards determining the efficiency of officers. Before a trial by court-martial he was valuable as an adviser or, later, as a witness, and had a peculiar usefulness in imparting instruction concerning mental hygiene and the control of war neuroses or psychoses.²⁰

ELIMINATION AND REASSIGNMENT OF MEDICAL OFFICERS

During the training period, as the qualifications of individual members of the Medical Department personnel became more and more apparent, some officers were eliminated from the division concerned, and others were reassigned. In some divisions a number of officers were shifted in order both to assign them to those duties for which they were best fitted and to avoid the necessity of placing junior officers over seniors. In the 26th, some lieutenants were assigned as regimental surgeons, for to secure best results it was found necessary to ignore rank to a certain extent.¹¹

DIVISION VENEREAL DISEASE CAMP

During the early training period of most divisions no camp for the treatment of venereal disease was established; but though this was done later, the study of the venereal problem, from the beginning, kept the division urologist fully occupied. His supervision of the semimonthly inspections and of social diversions developed both appreciably. Much of his time was devoted to lectures and to personal inspection of all the prophylaxis stations of the division.

MEDICAL DEPARTMENT EQUIPMENT AND SUPPLIES

Experience in obtaining equipment varied considerably. Ordinarily, when divisions arrived in France the equipment of their sanitary trains was

salvaged, and organizations proceeded to their training areas with a minimum of supplies. Thus the 42d arrived in its training area with only the drugs that had been carried on the persons or in the lockers of individuals.²¹ Supplies were issued to all such divisions as promptly as possible after arrival, issues corresponding to requisitions or needs. As a rule they were obtained readily because of direct communication between the division surgeon and the chief surgeon, American Expeditionary Forces, or his representative at Chaumont, and proximity of the training areas to the advance medical supply depot at Is-sur-Tille, but to this general rule there were some exceptions. The 26th Division records:¹¹

It was not long before supplies began to arrive in great quantities, and thereafter one of the most striking features of the service in France was that in spite of lack of precision in determining what were trench stores and what were organization supplies, and in spite of the fact that later the medical supply system of the army was consolidated with that of other departments, the flow of medical supplies for combatant troops was not only sufficient in quantity but its great abundance never failed. No matter what the difficulty of the situation or the extravagance of the demand, advance depots were always prepared to furnish the needed dressings, medicines, or other medical supplies.

There was a considerable difference in respect to the immediate needs of the divisions which moved to areas where camp hospitals had been established and in respect to those where there were no such hospitals. Adequacy of supplies sometimes fluctuated in the same division. Supplies normally adequate ran short in some divisions in the presence of the influenza epidemic, when the number of patients reached proportions which had not been foreseen. Some divisions reported their equipment as incomplete, in others the equipment of the sanitary troops and train was satisfactorily completed except in the matter of transportation. Sometimes delivery of supplies was delayed because of traffic embargoes. In the 1st Division a source of some difficulty was lack of spare parts for ambulances and the need that new rims be made for ambulance wheels in order to fit French tires.¹⁷ In the 39th Division special difficulties were encountered, for lack of adequate supplies was aggravated by lack of transportation and of hospital facilities. Almost all divisions in training areas were embarrassed by lack of ambulances, for in general there was a great ambulance shortage, especially when a division first occupied an area. Thus the 90th Division received no ambulances until just before it moved into the lines,¹⁹ and the 71st Division (except when it was able for a few days to use ambulances borrowed from another division) had a similar experience. Sections of the United States Army Ambulance Service were assigned temporarily to some divisions.¹⁹

When the earlier divisions arrived in France, War Department Tables of Organization did not provide a divisional medical supply unit, but the necessity for this was so evident that one was established in each division then in France.²² Later such a unit was prescribed by the Tables of Organization which assigned it to the sanitary train.²³ At first the demands of the division supply units on the Is-sur-Tille depot were very great, because all of the Medical Department organization of the division needed to be brought up to standard. On the other hand, when divisions prepared to

move to the trenches some of the supplies used in the training areas were salvaged, for only mobile equipment was taken to the front.

Conditions forced many changes in supplies within the divisions, nor were divisions alike in their distribution or use of supplies. Generally speaking, the total weight of equipment, as stipulated in the Manual for the Medical Department, was reduced when a division prepared to leave a training area; but on the contrary there were increases in the weight of certain supplies, such as blankets, litters, and dressings of the larger sizes.

Automatic replenishment of supplies by means of returning empty ambulances was worked out to a certain extent in the training areas, but this system was developed to a much higher degree when divisions moved into the lines.

When the first divisions arrived in France there were no attempts at specialization in their field hospital service, but later certain field hospitals in each division were specialized after receiving equipment for the treatment of gassed and surgical cases, respectively.²⁴

The Medical Department organizations of the Second Corps turned in their equipment and were refitted to conform to British standards. Their regimental detachments and their sanitary trains were reorganized. By consolidation of one field hospital and one ambulance company, a unit was formed similar to the field ambulance of the British, and two of these were assigned to the division from whose sanitary train they had been organized. The surplus field hospitals and ambulance companies, two of each per division, were detached from the British Expeditionary Forces and assigned to the American Expeditionary Forces in France.²⁵

MEDICAL DEPARTMENT TRAINING

Training began immediately after divisions reached their respective areas and was very intensive. Generally speaking, training of the Medical Department was handicapped by the necessity of inaugurating and supervising sanitary measures and of operating infirmaries and hospitals. Also, the wide dispersion of that department in a division precluded the assembly of its sanitary train except when it participated in divisional maneuvers, and even then a part of the train usually was obliged to remain in attendance at the camp hospital or to perform routine evacuation service. Thus the ambulance section of the 26th Division was located at Liffol le Grand, two of its field hospitals at Bazoilles-sur-Meuse, a third at Neufchateau, and a fourth in a rear area.¹¹ Later, one of its field hospitals operated as a camp hospital at Liffol le Grand. Similarly, the sanitary train of the 1st Division was dispersed in three villages, included in its Infantry area, while one of its field hospitals operated as a camp hospital in a fourth, also a part of the division medical personnel remained with the Artillery in another area from that occupied by the Infantry.¹³ For these and other reasons, training of the Medical Department varied considerably in thoroughness and scope and in the relative amount of stress laid on different subjects.

In some divisions there was little Medical Department training except drills and in gas defense. So far as possible, however, extensive and thorough

schedules of training were thoroughly followed, as in the 1st Division, whose sanitary train conducted or participated in elaborate maneuvers covering a wide area and lasting over a considerable period.²⁶ Ordinarily, Medical Department organizations of a division conducted terrain exercises in conjunction with line troops; and constant instruction was given to commissioned and enlisted Medical Department personnel, as the case might be, in such subjects as hygiene, sanitation, nursing, ward and mess management, treatment of gassing, pathology and treatment of wounds and wound infection, trench foot, road sketching, and first aid. In this last subject, which was specially for enlisted men, particular stress was laid on control of hemorrhage, treatment of fractures and dislocations, and the application of splints. Consultants gave instructions in their respective specialties. The training of the divisions which first arrived in France was more thorough than that of those which came later, as the need for all troops on the firing line was increasingly urgent after the spring of 1918.²⁷

Throughout, training in open warfare was stressed, but different divisions emphasized certain other items to different degrees, so far as was possible under the schedule. Thus the 1st Division gave special attention to the physical development of troops, to first-aid, and to degassing.²⁶

In the 32d Division special attention was given to treatment of fractures and to the application of different kinds of splints. Instruction in this division, as was the case in others, was in continuation of that already given in the United States, supplemented by that prescribed by bulletins issued by General Headquarters and by drills and maneuvers.²⁸ Some medical officers of this division were assigned to French hospitals to learn war surgery. The 36th Division gave special attention to training litter bearers of the line.²⁹ Training of its sanitary troops included lectures, map reading, and field sketching. Also much attention was given to coordination of the Medical Department with the line in the care and removal of casualties and to the instruction of all troops in the application of shell-wound packets. Some divisions were largely trained by the French. In practically all divisions medical officers gave lectures to the troops. Some divisions sent officers from regimental medical detachments and the sanitary train to the sanitary school at Langres, but others did not. Officers who had attended the school gave instruction to those that remained in the divisional training area, and these relayed it to others.²⁷

The amount of instruction which the medical officers received varied considerably. Thus the medical officers of the 36th Division received but two general lectures, one of which was given by the divisional orthopedist.²⁹ Other instruction in this division was given by the medical officers of their organizations among themselves. In the 91st Division medical officers were assembled for but three general lectures.³⁰ Laboratory officers were sent for instruction to the Army laboratory at Dijon.

Ordinarily, when a division was withdrawn from the lines for rest and renewed training, a conference of all the medical officers of the division was held, as in the 3d Division, after its operations in the Marne area, with a view to improvement of service and thorough instruction in the lessons learned at

the front.³¹ The animal-drawn ambulance company of this division was designated by the division surgeon as a training and replacement unit for other Medical Department organizations of the division.

In the British areas, our organizations, after replacing their supplies with British equipment and organizing to conform to the British standard, were trained in conformity with British methods of warfare. This training was very thorough; it included the following subjects: Instruction in the British system of collection and evacuation of wounded; performance of regimental ambulance service for troops in the trenches; assignment of detachments of ambulance companies to British dressing stations and to bearer posts; temporary assignment of medical officers to British medical units and the operation of these units by them under British supervision; assignment to field ambulances at the front; detail of officers to the Army sanitary school at Langres and attendance at other schools where lectures and drills were given in such subjects as gas defense, operation of the evacuation service, bathing, disinfection, provision and operation of laundries, methods of cleaning clothing, etiology, pathology and treatment of trench fever and trench foot, and treatment of fractures and wounds. In connection with these lectures demonstrations were given of surgical and sanitary equipment.³²

SANITARY SQUADS

The first regulations concerning sanitary squads as distinct military entities of our Army were published in the Manual for the Medical Department, 1911. These instructions, which were general in character, contemplated that the personnel of these units would be drawn from medical organizations on the line of communications; would be under the direct control of the chief surgeon of the line of communications; and would be charged with the supervision of sanitation, operation of sanitary apparatus, selection of water, disposal of wastes, and under certain circumstances the performance of duties of sanitary detachments. The edition of the manual published in 1916 prescribed that these units be organized on the line of communications at such places as might be necessary; that they consist, under the immediate command of a medical officer, of enlisted men of the Hospital Corps and such numbers of other enlisted men and civilian laborers as circumstances required; that they be charged with the duties mentioned above; and that they be not employed to relieve regimental and other sanitary organizations of the responsibility of providing for the sanitation of their own camps.

On December 3, 1917, sanitary squads were provided in the proportion of two for each division, each squad to consist of the following personnel: One officer, 4 noncommissioned officers, 20 privates, and 2 chauffeurs.³³ Though these squads accompanied their respective divisions to France, and at first accompanied them to the front, they were designated in June, 1918, as organizations belonging to the Services of Supply,³⁴ and thereafter they were used to assist the sanitary inspectors of divisions, or, later, the town majors (billeting officers), in the performance of their sanitary duties as these were prescribed in General Orders, No. 18, G. H. Q., A. E. F., January 31, 1918. Town majors belonged to the Services of Supply, and were permanently assigned to

the training areas through which the successive divisions passed. The eventual relationship of the sanitary squads to these officers and to the authorities of the division is shown by the following communications from the office of the chief surgeon, A. E. F.:

July 16, 1918: "Sanitary squads are Services of Supply organizations, and while at present some are attached to divisions it is only a question of time before they will be removed and used for Services of Supply purposes entirely. No equipment has been designated."³⁵

August 5, 1918: "It is the intention to use all sanitary squads for the various divisional areas and hospital centers, etc. The sanitary squad should not accompany the division when it moves to the front or at any other time unless the area is being totally abandoned. While in the divisional area the sanitary squad should be under the control of the division surgeon."³⁶

September 3, 1918: "The sanitary squads will remain with a division until it goes into the line. Thereafter they will be separated from the division, remaining in the divisional area. The idea is to have sanitary squads with each divisional area that are familiar with the conditions and remain there constantly."³⁷

October 1, 1918: "It is not the policy to detach sanitary squads from divisions which are serving permanently in the Services of Supply."³⁸

In a number of divisions and divisional areas, as there was at first no clear conception of the duties of sanitary squads, these squads were required to perform the duties of prisoner fatigue details, to do general police or miscellaneous work only remotely connected with sanitation. Later, when responsible officers became better educated in the matter and came to appreciate the value of trained men in promoting sanitation, members of these squads were employed to a progressively greater degree in educating troops in the measures necessary to maintain health, the construction and operation of bathing and disinfesting plants, supervision of disposal of sewage, garbage, and refuse, sanitary inspections, and cognate duties.³⁹ Such activities as care of bath-houses and laundry and disinfesting plants and conservancy outside of divisional areas, it was soon established, properly pertained to the Quartermaster Department.⁴⁰

When a division, well trained in sanitation, occupied an area, the sanitary squads, with the concurrence of the zone major, were used for any necessary work, the nature of their service being influenced by existing conditions. Intervals between particular periods of activity were spent often in estimating the actual billeting space per man available for troops in the areas, for this information proved to be of considerable value not only when divisions entered these areas for the first time but also when they reentered them from the line.⁴¹

The men of the sanitary squads were encouraged to enlarge their opportunities and to use their own discretion in the formulation of plans which might yield the best results under differing circumstances. They were given a clear outline of work that they were expected to perform, the details to be filled in by them as conditions indicated.

COMBAT DIVISIONS ON THE MARCH

In general, the duties of the Medical Department of a division on the march had been adequately outlined in the Manual for the Medical Department, which was published prior to our entrance into the World War. However, because of the unique situation that existed in the American Expeditionary Forces, there were, necessarily, some divergences from the principles outlined in the manual.

It was the exception rather than the rule for a division as a whole to march when changing from one area or sector to another. Railroads usually were used in the transportation of divisional troops from base ports to their training areas near the front; and, because of the imperative demands of the World War, motor transportation was utilized to a great extent for quick transport of troops from one part of the front to another. At times, when a division moved, marching, motor transportation, and railroads were all used. For present purposes the change of locality of a division is considered marching, since in no other way can the duties of the Medical Department connected with this activity be briefly covered.

In short, the duties of the Medical Department on the march are to render first aid where required, to transport the sick and wounded, and to make suitable disposition of them on arrival in camp.⁴² The coordination of the discharge of these responsibilities by the various Medical Department organizations of the division is the function of the divisional surgeon.

Back of the front lines, when our divisions moved from one location to another in France, it was not the custom to make use of field hospitals of the divisions for the reception and care of the sick and wounded at the end of each day's march. The necessity for this was obviated because there existed in France sufficient immobile hospitals in close proximity to the routes which divisions took in moving from one area to another, thus permitting of immediate evacuation from the moving columns to hospitals. There being, then, no necessity for using field hospitals en route, the sanitary train moved as a unit, frequently being left behind the division for a day or two to care for and evacuate its sick to near-by hospitals. When the troop movement was made by train the sanitary train moved overland.^{43, 44}

Usually, ambulances were assigned to regiments on the march. The number so assigned varied, as did the type of ambulance. Some divisions used animal-drawn ambulances for work connected with marching troops, others used motor ambulances.

The following extract from the report of a division surgeon illustrates the use made of animal-drawn ambulances in connection with a marching division:⁴⁴

Before a march animal-drawn ambulances were distributed to regiments, and were used just in the rear of marching columns to pick up such cases requiring attention as "fell out." Motor ambulances could not be used immediately behind troops because of the impossibility of running them at the low speed required. These last-mentioned vehicles remained with the other motorized elements of organizations and picked up such cases as required hospitalization and evacuated them to hospitals in the rear. These cases to be evacuated were left with a member of the Medical Department detachment at

definite places on the road. As a rule it was the experience of medical officers that very few hospital cases were picked up on marches. Such a condition was obviated by careful examination of all potential cases of that character before the movement began. One great advantage of the presence of an animal-drawn ambulance with moving troops was the fact that a medical officer could examine and, generally, administer all necessary treatment to minor cases in the moving ambulance without getting out of touch with his organization. In many instances the men so picked were able to return to their companies after they had been given brief attention and a short rest in the ambulance and complete the march with no further trouble.

On the other hand, animal-drawn ambulances were not so favorably considered in other divisions, as evidenced by the following extract from the report of a division surgeon (26th Division):⁴⁵

The division left Soissons March 18, 1918, and detrained between Brienne-le-Chateau and Bar-sur-Aube. There was to be a maneuver, with practice in entrainment, detrainment, and a march in several columns toward the Marne against a hypothetical enemy.

Although there was a military problem to solve, the real work consisted of maintaining the supply of rations, reclothing the division, and evacuating the sick while moving away from the railway. A considerable amount of clothing left in the hands of the Medical Department after the treatment of gas cases was distributed at this time. Although the marches were long and there were many cases of sore feet, due to worn-out shoes or to improperly fitted ones, it was noted that the physical condition of the men improved at once after getting away from the dugouts and the strain of battle which they had endured at Soissons.

This move gave the Medical Department its lesson in functioning while covering long distances by train, by truck, and by marching, with coincidental sanitary activities, long runs to hospitals, and care of transportation. Here was shown the uselessness of horse-drawn as compared with motor transportation. The horse-drawn ambulances which had been attached to the Artillery regiments proved finally to be of some value acting as portable aid stations in open warfare, and could be immediately used for ambulance service over short hauls. The condition of the horses, however, prevented this latter use except in rare emergencies.

The French transportation authorities refused to permit any medical units to entrain with the first elements of the division; this in spite of specific instructions for such entrainment. The result was evacuation of the sick from the entire division had to be accomplished with one ambulance. It was fortunate that there were little French hospitals at both Brienne-le-Chateau and Bar-sur-Aube, the chief detrainment points of the division, and, until the ambulance companies of the division arrived, that the haul was very short.

During the later days of the maneuver the evacuation of the sick for the most part was to Chaumont, and at a still later period men were evacuated to the base hospital at Neufchateau. In view of the shortage of hospital and transport facilities there was some concern about 175 cases of delayed mustard-gas action, which occurred in this area, but they proved not to be severe. The 102d Infantry was shelled just before it left Soissons; it was not until 24 hours after detrainment at Bar-sur-Aube that marching and perspiring made the burns apparent.

Division headquarters was established at Bar-sur-Aube, and for the first time there was a distinct separation into two echelons. The commanding general, his aides, and the general staff sections were billeted in one hotel, the technical staff in another, with junior officers scattered throughout the town. From then on this division of the headquarters staff became customary.

Something in the military situation became urgent, and plans for the maneuver ceased. The troops were marched rapidly to the Rimaucourt area, where a rest was expected. On arrival the sanitary train was concentrated at La Fauche and Pressous-la-Fauche. A period of inspection, with attention to equipment and instruction of personnel, would have been useful after the disorganization due to the training period. This was not

accomplished, however, and on March 31, 1918, the division was put aboard trucks and trains and sent to the Toul sector. The transportation of the sanitary train traveled over the roads.

There were occasions when the sanitary train was removed from control of the division surgeon while the division was on the march. Such an instance was reported by the division surgeon, 1st Division, when that division moved to its assembly area near Beauvais in July, 1918.⁴⁴ The division had been moved by truck, and in consequence the troops arrived in the assembly area well ahead of the division train (of which the sanitary train formed a part). The effect of this measure was to delay the arrival of the field hospitals and Medical Department supplies at a time when the division was scheduled to advance on the enemy within 30 hours, thus preventing the division surgeon making orderly and complete arrangements for the care of the wounded.

Another instance where ambulances were separated from a division changing areas occurred when the 2d Division moved in May, 1918, from the Verdun sector to its new area, of which Chaumont, Oise, was headquarters.⁴⁵ The division was relieved from the Verdun sector on May 12, 1918. During the next four days all organizations had moved by train, truck, or by marching to an area slightly west of Bar-le-Duc. Prior to leaving the Verdun sector, nine animal-drawn ambulances were assigned to the three regiments of artillery, to accompany them on the march.

On May 19, 1918, the move to the Marne was begun. The motorized trains, in convoys of motor cycles, touring cars, ambulances, and trucks, skirted Paris and after a run of two days arrived in the new division area. The Infantry, Artillery, and animal-drawn trains arrived by rail at the edge of the area, and reached their destination by marching. Influenza was epidemic, and the trip in the box cars exposed many of the men. Consequently, when the troops started on the march, after detraining, a great many of the men, who had developed the disease, were unable to undertake the march. The motor ambulances had gone on ahead with the motorized trains, and liaison with the division surgeon could not be established and regimental surgeons had difficulty in evacuating those taken sick during the trip. Fortunately, the distance to division headquarters was not great, and as soon as possible ambulances were sent to the aid of the regimental surgeons. Subsequent to this experience, the division surgeon, 2d Division, always assigned ambulances to troops on the march, to remain with them until their billets or entraining points were reached.⁴⁶

Because of the slow movement of railroad trains, especially in the zone of the armies, it was possible to send motorized ambulances to detraining points prior to the arrival of troops moving by train, so as to evacuate the sick promptly to hospital, and to accompany the troops on the march from the detraining points.

On the march the services of the Medical Department personnel attached to combatant organizations were constantly available to men of those organizations. This availability was effected by distributing the medical personnel

among the troops, usually by battalion. The ambulance accompanying the marching troops was used for the care of those dropping out of the marching column. When the troops went into bivouac, or billets, at the end of the day's march, regimental surgeons established infirmaries where sick call was held. Medical Department supplies, carried in the medical carts, were used at this time. On the other hand, when troops moved by train, contact between the Medical Department personnel and troops of the division could not be constantly maintained. This was due to the fact that box cars, between which there was no communication, were used. During brief halts of the train, medical officers of a regiment had opportunity to visit the men in the cars and to administer to their needs from emergency medical cases which were carried by medical officers.

DEPOT AND REPLACEMENT DIVISIONS

MEDICAL SERVICE

The medical service in depot divisions differed essentially from that in combat divisions and, therefore, requires special description; but as in all such divisions the medical service was similar, an account of one depot division will serve for all. The Medical Department activities of the First Depot Division (41st Division) have been chosen for description.

FIRST DEPOT DIVISION

Headquarters of this organization arrived in France December 30, 1917.⁴⁷ Upon landing at Brest individual regiments were scattered throughout the line of communications, while division headquarters and about one-fourth of the division, including two field hospitals and two ambulance companies, moved to La Courtine for station.⁴⁷ The weather was bitterly cold, buildings were unheated, wood was scarce, and there was entire lack of sanitary apparatus. No transportation, either motor or animal-drawn, was available. The hospital facilities consisted of an empty barrack. In this a camp hospital was established, equipped with the small amount of the medical combat supplies which it had been possible to bring from the port of embarkation.

Acute infectious diseases which had been prevalent on shipboard persisted at La Courtine, where a number of cases of pneumonia developed and where several deaths occurred from this disease.⁴⁷

Through the chief surgeon of the line of communications, needed equipment was obtained as speedily as possible. The shortage which existed was due to the fact that most of the supplies which had been brought from the United States had largely been salvaged en route. The majority had been taken over at the port of debarkation (Brest) by the medical supply depot. What was left was received very slowly.

On January 24, 1918, the division left this station for St. Aignan-Noyers, where it arrived January 25.⁴⁷ This change of station had an immediately beneficial effect upon the health of the command, which was enhanced by the fact that a detachment had been sent ahead to provide quarters and supplies.

Troops were billeted in empty buildings, barns, and lofts. While there were no medical supplies except the small amount which had been brought with the troops, more were purchased locally.

Three ward units of 50 beds each and 24 ambulances were obtained and arrangements made to evacuate patients to base hospitals at Chateauroux and Blois. The former was receiving patients at this time; the latter was still in process of organization.

The health of the command steadily improved. Acute infectious diseases greatly diminished, and in a short time pneumonia ceased to be of importance.

HOPITAL FACILITIES

At various points throughout the divisional area, buildings were hired for hospital purposes, and in these the sick were placed upon litters or bed sacks. Facilities for their care were few at first, but the men were made comfortable and carefully looked after. Happily the sick were not numerous at first nor were their ailments serious.⁴⁷

As the troops were billeted in small training detachments throughout an area covering about 250 square miles, the medical administration of this territory was divided into three districts, each provided with a district surgeon, a district sanitary inspector, and an infirmary of 50 beds.⁴⁸ As the principal infirmary grew, near-by buildings were rented so that finally it accommodated nearly 200 patients and began to assume the functions of a central camp hospital for the area.⁴⁸

During the reorganization of the division, the field hospitals and ambulance companies, which were numbered from 161 to 164, inclusive, were detached, sent to the front, and the establishment of camp hospital No. 26 was begun.⁴⁹ This camp hospital, which was established April 10, had previously operated a small infirmary where adequate care of the sick was provided. It now consisted of 15 Service de Santé buildings, each of which had a capacity of about 30 beds. After providing space for officers' quarters the operating room, laboratories, and other hospital departments, the capacity of the hospital proved to be about 300 beds. The personnel for the operation of this hospital was drawn from the Medical Department of the division. Generally an important part of this institution was a large dental clinic, later (July 29) supplemented by the central dental laboratory which was provided with base laboratory equipment for the purpose of doing prosthetic dental work.⁴⁹ In this clinic a course of instruction was carried on for enlisted dental assistants.

After the camp hospital had been established, Infirmary No. 1 was converted into a neurological unit and placed under the direction of the division neurologist.

The camp hospital was rapidly increased by the addition of new barracks, until by the 1st of September, 1918, it had 1,000 beds. Because of the appearance of influenza it already had more patients than that, and the overflow had to be cared for in tents.⁵⁰

On September 10 a convalescent hospital was established in the convent building at Pontlevoy. Hospital accommodations here were 250 beds, with an anticipated expansion to three times that number.⁵⁰

On October 20, 1918, Infirmary No. 3 was established. This infirmary had a capacity of 300 beds.⁵⁰

In the early part of November authority was obtained to enlarge the camp hospital 900 beds by constructing additional wards, each measuring 30 by 156 feet. The Château la Leu was leased in order to accommodate 200 additional patients for the convalescent hospital at Pontlevoy.⁵¹

On November 14, 1918, an infirmary with a capacity of 250 beds was established at St. Aignan.⁵² It occupied a French hospital and a three-story building formerly used as a school. Personnel for its operation was drawn from the 304th field hospital, which had been assigned to the division as a neurological hospital. As the wards of the neurological hospital were now almost empty, it was practical to close it by transferring its patients to Camp Hospital No. 26.⁵²

CHANGES IN MEDICAL DEPARTMENT OPERATIONS

On March 7, 1918, the name of the division was changed from the 41st Division to First Corps Depot Division.⁴⁸ Its chief function was to receive, classify, equip, and train troops for combat divisions; and in order that this might be accomplished, casualties from the United States and patients discharged from base hospitals were forwarded to it.

In order to meet the special duties incumbent upon the Medical Department of the division, it now became necessary to make certain changes in its operation. Its chief functions were now as follows:⁴⁸ (1) The care of the sick of the permanent organization and of the casualties passing through the area. (2) Sanitation of the area. (3) The removal of the physically unfit from combat organizations and assignment of them to appropriate duties. (4) The training of the enlisted men of the medical detachments prior to sending them to the front for duty.

On the last of July, 1918, the area was divided into six districts in order to promote medical administration, and in each of these districts a district surgeon and a district sanitary officer were assigned.⁵³

Incoming troops were received at the classification camp, where each man was given a physical examination.⁴⁹ Those found physically fit were passed on, while the physically unfit were sent, if necessary, to hospital for treatment or to the disability board for classification.

The military population of the divisional area was increasing, and in order to meet its sanitary requirements it became necessary to augment the size of the sanitary squads by details from the line, but as this necessarily interfered with the training of these details the sanitary squads were then entirely reorganized. Their original personnel was greatly increased by men in class B or C being transferred to the Medical Department for the period of their service in sanitary organizations. These squads now took over all the police work of the area except the care of kitchens and billets.

Their work included such tasks as the procurement and supervision of water bags and shower baths, cleaning of the streets, care of latrines, disposition of wastes, and similar duties.⁵¹ Because of the difficulty in enforcing proper sanitation of the towns, the Medical Department took over complete control of all police work therein and performed it as in the area at large through its sanitary squads.

As the number of casualties passing through the area was very great, sometimes numbering as many as 4,500 a day, the quarantine for infectious diseases became very difficult. The usual system had to be abandoned.

When orders were received, as was the case, that the division hereafter would receive men in classes B, C, D, and organize them into companies of 2 officers and 150 men each, another disability board was appointed with station at the special training battalion at Mehers.⁵²

Four American steam sterilizers were procured, and provision was made at the classification camp that all men in classes B and C have their clothing sterilized before leaving the division. Arrangements were also made whereby they would be given new underwear and class A equipment except rifles, helmets, and gas masks.⁵²

In order to avoid great delay in the movement of troops and overcrowding of the area, a medical officer was appointed division epidemiologist. He was authorized to issue necessary orders in the name of the commanding general.⁵⁴ Cases of infectious diseases among casualties were sent to the hospitals, and only the immediate contacts were isolated. When epidemics occurred in the permanent personnel, quarantine of companies and other organizations was practiced when necessary.

Many casualties arrived in a dirty condition because of their long journey from the United States and the inadequacy of bathing facilities en route. Some were infested with lice. This situation was met by establishing a disinfecting station and portable shower baths in a local canning factory. The clothing of the men was treated by steam under pressure in the vats that had been used by the plant.

On July 9 casual officers and enlisted men of the Medical Department were ordered to report to this division for classification as replacements instead of to the Medical Department camp at Blois, as had been the former practice.¹³

On July 26, 1918, 100 officers and 2,000 enlisted men of the Medical Department reported at the sanitary school which had been established at Thesee.

The sanitary personnel of six divisions was forwarded to the depot division for disposition, one field hospital, and two ambulance companies. The organizations so received were skeletonized, each to consist of one officer, one noncommissioned officer, and five privates; the rest of the personnel was used as replacements.

On the 24th of September plans for a cantonment at Thesee to accommodate 2,000 troops were completed, and a camp was established there to receive the sanitary troops which formerly had been scattered throughout the town.⁵⁰

In order to combat the influenza, the following measures were adopted on October 22, 1918:

All troops upon arrival were given a physical examination. Seriously sick were immediately transferred to the hospital, and the slightly sick were placed in certain barracks at the classification camp, which had been set aside for the purpose. Here they were kept under the observation of a physician and ward attendants. If they recovered within a few days, they were sent to their organizations, otherwise they were sent to the hospital. This measure had for its object the segregation and observation of cases before the actual onset of serious disease. Whenever it was practicable to do so, troop trains passing through the area en route to other destinations were stopped and the men on board were taken off and given a medical examination. They were permitted to dry their clothing and were given a hot meal.⁵¹ The men of the command who showed minor symptoms were carefully observed, and those with slight coughs were segregated in separate billets. Divisional orders were issued that men sleep head to foot. Twenty square feet of floor space was the minimum allowance, but provisions were made for 40 square feet where this could be afforded. Officers of the day were required to inspect billets at night in order to see that proper ventilation was maintained, and that the men were sleeping head to foot.⁵¹

ORTHOPEDIC TRAINING BATTALION

On March 23, 1918, a special orthopedic battalion was organized at Mareuil, which was within the division area.⁴⁹ This unit was organized on military lines by the assistance of the chief consultant in orthopedics for the American Expeditionary Forces. The training was conducted by medical officers. The purpose of this orthopedic training battalion was to rectify, or at least improve, the condition of the men suffering from flat foot or other orthopedic disabilities. Men sent to it were selected from the classification camp of the division or in a few instances transferred to it from other divisions. Members of the orthopedic battalion were on a duty status. Within a month its personnel rose to 1,000 men. On April 29, this detachment was moved to Mehers, where its capacity was enlarged to 2,500 and shelter provided in tentage and temporary barracks.⁴⁹ In addition to the orthopedic cases, convalescents of all types were now sent to the camp for recuperation and training, with successful results.

VENEREAL LABOR CAMP

A number of casualties had venereal diseases. To care for these a venereal labor camp was established during the month of July, 1918; and while all acute cases of this character were isolated and assigned to light duties while undergoing treatment, such cases as required hospital attention were sent to venereal wards in the camp hospitals.⁵⁵

By October 10, the venereal labor camp had 950 patients under treatment. The greater part were accommodated in tents, but generally some permanent buildings were constructed. To this camp were sent all patients suffering from venereal diseases who did not require rest in bed or surgical treatment. Its occupants came from the depot division and from the casualties

passing through the camp. On October 11, its designation was changed to medical labor camp, the former nomenclature being objectionable as a mail address, both for patients and for attending personnel.⁵⁵

FIRST DEPOT DIVISION DISCONTINUED

The First Depot Division was abolished December 26, 1918, pursuant to telegraphic instructions, headquarters, Services of Supply.⁵⁶ Units of the 41st Division were ordered to reorganize with as many of the personnel of that division as remained in the divisional area, supplemented by a sufficient number of casualties to bring them up to authorized strength. Officers and enlisted men who desired to remain in France and requested to do so were transferred to the first replacement depot, which thereafter was to replace the First Depot Division.⁵⁶

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- (30) Report of Medical Department activities, 91st Division, A. E. F., prepared under the direction of the division surgeon, 91st Division, undated, 2. On file, Historical Division, S. G. O.
- (31) Report of Medical Department activities, 3d Division, A. E. F., prepared under the direction of the division surgeon, 3d Division, undated, Part V, 2. On file, Historical Division, S. G. O.
- (32) Report of Medical Department activities, Second Army Corps, by Col. C. C. Collins, M. C., corps surgeon, undated, 3. On file, Historical Division, S. G. O.
- (33) Letter from Surgeon General, U. S. Army, to The Adjutant General, December 3, 1917. Subject: Sanitary Squads. On file, Record Room, S. G. O., 322.91-21. (Sanitary Squads).
- (34) G. O. No. 85, G. H. Q., A. E. F., June 3, 1918.
- (35) First indorsement from the chief surgeon, A. E. F., to the division surgeon, 82d Division, July 16, 1918. Subject: Sanitary Squads. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files 322.324).
- (36) First indorsement from the chief surgeon, A. E. F., to the division surgeon, 79th Division, August 5, 1918. Subject: Sanitary Squads. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files 322.324).
- (37) First indorsement, from the chief surgeon, A. E. F., to the division surgeon, 80th Division, September 3, 1918. Subject: Sanitary Squads. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files 322.324).
- (38) First indorsement, from the chief surgeon, A. E. F., to the division surgeon, 6th Depot Division, October 1, 1918. Subject: Sanitary Squads. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files 322.324).

- (39) Report on the activities of sanitary squads, A. E. F., by Maj. Henry Pleasant, Jr., M. C., undated, 3. On file, Historical Division, S. G. O.
- (40) Ibid., 5.
- (41) Ibid., 20.
- (42) Manual for the Medical Department, 1916, par. 635.
- (43) Report of Medical Department activities, 26th Division, A. E. F., prepared under the direction of the division surgeon, 26th Division, undated, Part I, 11. On file, Historical Division, S. G. O.
- (44) Report of Medical Department activities, 1st Division, A. E. F., prepared under the direction of the division surgeon, 1st Division, undated, Part II, 36, 37. On file, Historical Division, S. G. O.
- (45) Report of Medical Department activities, 26th Division, A. E. F., prepared under the direction of the division surgeon, 26th Division, undated, Part I, 11, 12, 13. On file, Historical Division, S. G. O.
- (46) Report of Medical Department activities, 2d Division, A. E. F., prepared under the direction of the division surgeon, 2d Division, undated, Part I, 20. On file, Historical Division, S. G. O.
- (47) Report of Medical Department activities, 41st Division, A. E. F., prepared under the direction of the division surgeon, 41st Division, undated, 4. On file, Historical Division, S. G. O.
- (48) Ibid., 5.
- (49) Ibid., 6.
- (50) Ibid., 9.
- (51) Ibid., 11.
- (52) Ibid., 12.
- (53) Ibid., 8.
- (54) Ibid., 7.
- (55) Ibid., 10.
- (56) Ibid., 13.

CHAPTER IV

MEDICAL SERVICE OF THE DIVISION IN COMBAT

The following discussion of methods generally employed in divisions in combat for the care and evacuation of sick and wounded comprehends important details of the usual practices. As will be noted, no one method universally was employed; much was left to the initiative, discretion, and resourcefulness of the division surgeon and his subordinates. No orders standardizing the methods in question were issued by higher authority except to a limited degree by corps surgeons and to a lesser degree by army surgeons. Though, in general, the system followed was that prescribed in Field Service Regulations and, in more detail, in the Manual for the Medical Department, the divisions differed not only in the methods of their so doing, but individually they employed different methods at different times under varying circumstances, both in trench and in open warfare. This went so far that methods in one regiment sometimes differed for certain reasons from those of other regiments in the same division. It is not practicable to discuss in this chapter all the numerous differences in the details of medical service which are noted later in the chapters having to do with individual engagements. Here only the most important differences in methods will be mentioned briefly. For further details the reader should consult subsequent chapters.

ORDERS PRESCRIBING METHODS IN PARTICULAR DIVISIONS

Before going into further details it will perhaps be best to quote certain orders prescribing methods actually followed by particular divisions.

In the 42d Division the following plan for the evacuation of sick and wounded and for furnishing a forward flow of medical supplies was prepared by the division surgeon April 4, 1918:¹

MEDICAL SERVICE FROM FRONT TO REAR

For medical service from the front the following will be observed:

Front line trenches.—Wherever possible first aid and splints—when the nature of the injury renders the latter necessary—will be applied where the man falls. Hemorrhage will be controlled at the earliest possible moment. If we can avoid carrying a man with a fractured extremity for even a foot, until a splint has been applied, we will save much pain, shock, infection, and damage to tissue from jagged ends of bone. The patient will be carried by the regimental medical personnel, or by men from combatant troops detailed for that purpose, from place of injury to the battalion aid post.

Battalion aid post.—Here any attention that may be necessary will be given—first aid, splints, and control of hemorrhage, if not already done. See that dressings and splints are properly adjusted. Diagnosis tag will be made out and attached by the first medical officer or member of the Medical Department who treats the man. Antitetanic serum will be administered and proper notation made by a "T" marked on the forehead with indelible pencil and the letters "A. T. S.," with date and hour on diagnosis tag. Warmth

will be administered to the patient. This is of the utmost importance in the prevention of shock. Patient will not be removed from litter, but another litter, with three blankets and whatever other supplies have been used on the case, will be sent back to the trenches by the bearers to replace those used. Patient will then be carried by litter bearers detailed from the ambulance section, 117th Sanitary Train, to the ambulance dressing station.

Ambulance dressing station.—This will be established at the farthest point forward that ambulances can reach with reasonable safety. Here any further attention that may be needed will be given. The patient, however, will be disturbed as little as possible and will not be removed from the litter. Warmth will be constantly maintained and hot drinks given to those able to take them but withheld in abdominal cases. The same system of exchange will operate. The ambulance dressing station will return by the litter bearers a duplicate of everything that came with the patient. In addition it will send by these bearers any supplies that the medical personnel at the front may require. To this end it will comply, as far as its supplies permit, with any request for supplies that may reach it from the front. To avoid confusion and mistakes these requests should preferably be by written memorandum. Reserve supplies of antitetanic serum, dressings, and other necessities will be kept on hand for this purpose. Antitetanic serum will be given to those who have not yet received it and the proper notations made as noted above. At the ambulance dressing station cases are selected for distribution to the various hospitals. They will be placed in an ambulance and transported direct to the appropriate hospital.

Ambulance service.—In addition to ambulance service noted under ambulance dressing stations, ambulances will be stationed at various points through the area, to be known as ambulance posts. The location of these ambulance posts will be shown in a later communication. These ambulances will transport to hospitals the sick arising in the various organizations in their vicinity, also wounded that may occur in a locality which would not naturally drain into an ambulance dressing station.

Field hospitals operating the various hospitals noted above.—These hospitals will be prepared to receive and care for sick and wounded at any hour of the day or night. They will keep a reserve supply of material on hand to replace the supplies on ambulances, as noted above. Evacuation of patients to base hospitals will be done only upon direction of the division surgeon, 42d Division.

The following points are emphasized:

(a) Surgical operations are prohibited except in a hospital. Treatment at the front and during evacuation to the hospital will be limited to first aid, splints, control of hemorrhage, and shock. Probing for bullets or fragments of any sort is expressly forbidden.

(b) Every effort will be made to secure delivery of the patient to the proper hospital at the earliest possible moment after receipt of the injury. Saving of time during the early period of the injury may mean life or death of the patient.

(c) During the evacuation of the patient he must be kept as comfortable as it is possible to provide. He must be disturbed as little as possible, and in any event, after the first dressings and splints are applied, only so much as is necessary to see that the dressings, splints, etc., have been properly applied and continue in good shape.

(d) Warmth will be continuously applied. This is our best preventive for shock. It will be secured by hot-water bags, alcohol or oil stoves, hot bottles, etc.

(e) A constant flow of supplies will be kept up from rear to front lines by the system of exchange noted above.

The following order concerning evacuations was issued in the 3d Division, July 23, 1918:²

Regimental surgeons will keep in touch at all times with the ambulance company dressing stations which evacuate their wounded. They will instruct their assistants, commissioned and enlisted, concerning the position of the particular dressing station which evacuates the wounded from the battalion to which their assistants are attached.

When a call is made for an ambulance the surgeon making the call will state explicitly the number of cases to be evacuated, which of them are litter and which sitting cases. He will also give sufficiently clear directions concerning location of the wounded to enable the ambulance driver to reach his destination with the least possible delay.

Redressing of wounds in the main dressing station should be reduced to a minimum. Arrest of hemorrhage is the principal cause for redressing. Dressings apparently in place should not be disturbed.

On September 6, 1918, additional instructions on this same subject were issued in the 3d Division, as follows:³

Method of supply while in action.—Regimental and battalion surgeons requiring medical supplies for their battalion aid stations during action will send request for the same to the advance ambulance dressing station evacuating their aid stations. The first ambulance returning to the triage will carry this request to the medical supply officer, who will immediately forward the necessary supplies by an ambulance returning to the advance ambulance dressing station. Wheel litters are an excellent means of transporting supplies to battalion aid stations. If necessary to abandon supplies during movement, they should be turned in at the advance ambulance dressing station.

When calling for ambulances be definite in giving location of the wounded, the number of sitting cases, and number of lying cases. Do not send for ambulances until enough wounded have been collected to fill an ambulance. A few hours of rest, after dressing and nourishment, while waiting for an ambulance is not detrimental and helps to overcome the first shock. Purely exhausted men after being given food and a few hours' sleep at the battalion aid station will often be able to return to duty.

Do not be in too much of a hurry to make a diagnosis of gas poisoning.

Regimental aid stations may usually be dispensed with to advantage, leaving the regimental surgeons free to keep up constant liaison between battalion aid stations and advanced ambulance dressing stations and to encourage as well as to supervise battalion aid surgeons at their work. Conserve the energy of your assistants and yourself by working proper shifts and taking every opportunity when off duty to sleep.

Antitetanic serum must be given at battalion aid stations. Make proper notation on the diagnosis tag and also place a "T," with indelible pencil or iodine, upon patient's forehead after the serum has been given.

Battalion aid stations should be separated from battalion P. C.

The division surgeon should be informed promptly of any loss in medical personnel. If telephone communication is not available, messages for the division surgeon will be transmitted from the advance ambulance dressing station by ambulance returning to the triage.

Intelligent men should be trained as runners. If a verbal message is sent, have the messenger repeat it to the sender in order to be sure that he thoroughly understands it. Send written messages except when the substance of them would betray matters of military importance.

The following report of the methods adopted in the 30th Regiment is descriptive of the evacuation service in many regiments:⁴

Advanced aid station company posts were in line with the troops. The first and most essential prerequisite for evacuation from front lines to battalion aid stations was the proper location of the latter. These were placed at the most advanced point to which an ambulance could possibly go; often within one-half kilometer of the front, or, again perhaps, three—rarely four—kilometers away, according to the character of the terrain. The battalion aid station was never placed in advance of the point reached by ambulances if this could be avoided. When situated beyond that point the difficulties of evacuation were doubled. On the Marne in July, 1918, it was found that having the aid station in advance of the ambulance head fully doubled the number of patients who had to be removed by litter, for a large number of patients made their own way to the aid station

who would not walk farther, and if this station was in advance of ambulances these patients had to be carried back to them. Thus a large number of wounded, and especially psychoneurotics, had to be taken by litter to the ambulances, who otherwise would have walked that distance. Details of litter bearers sent with patients from aid stations back to ambulances did not return readily through shell fire and were apt to become disorganized, whereas when sent forward for patients they returned in the quickest possible time.

During the defensive battle of the Marne evacuation was by far the most difficult of any experienced by the 30th Regiment, 3d Division, on account of the extremely heavy bombardment of the support and reserve positions and the back areas, and the formation of the terrain, which made it impossible for ambulances to go nearer than three kilometers to the front, or, during the early part of operations, nearer than four kilometers. Wounded in the front areas could be carried out only at night, and they had to be carried up a steep hill through a narrow, winding trail in the woods. The Medical Department personnel in this battle was wholly inadequate, each battalion having altogether only about 20 medical men and bandsmen. No provisions had been made at this time for furnishing litter bearers from the line troops, although line officers cooperated heartily with the Medical Department in furnishing details for this purpose.

The operation of ambulance companies in the 3d Division is thus described by the division surgeon:⁵

Main dressing stations were usually established from four to six kilometers back of the front lines, on a good road if possible, with one or more good roads leading to the front and rear. From these places ambulances, medical officers, and a sufficient number of enlisted men were sent to points farther to the front, working in cooperation and at times under direction of the regimental surgeons, but so far as practical it was found best to keep all ambulance personnel under the direction of the ambulance company itself, at the same time furnishing the regimental and battalion surgeons with what help they required. In many instances it was necessary to furnish litter bearers for evacuation from the farthest posts toward the front. Here the enlisted personnel of the animal-drawn ambulance company proved of great value, it having been found impractical to use animal-drawn ambulances for evacuations from the line when actually under shell fire. This was due to the increased hazard incident to slow progress and the distance it was almost always necessary to transport the wounded.

The litter bearers of the ambulance companies were sometimes in charge of a commissioned officer from the ambulance companies, and functioned from the battalion aid posts back to the farthest advanced ambulance station, which was only far enough to the rear to be reasonably safe. At other times they were under the control of the regimental or battalion surgeons, to augment the regimental medical personnel either on account of a depleted force or to help in the care and transportation of an unusually large number of casualties.

The commissioned personnel of the animal-drawn ambulance company was likewise used to replace the battalion surgeons as casualties occurred among them.

At the main dressing station in some instances where facilities would permit, gassed cases were separated from wounded, all casualties able to take nourishment were given hot chocolate or hot coffee and other refreshment, antitetanic serum was administered, wounds were redressed when necessary, tourniquets were looked for and examined, and only when absolutely necessary, blood vessels were ligated.

Sometimes all of the ambulance companies of a division consolidated. Thus during the Meuse-Argonne operation all the ambulance companies of the Sanitary Train, 3d Division, were stationed at Montfaucon, maintaining one large main dressing station, which was operated by one company under the supervision of the director of the ambulance section.⁶ Every portion of the narrow sector then occupied by the division was accessible by roads from this point. Two of the motor-ambulance companies functioned from the regimental and battalion aid stations back to the main dressing station and no farther.

Here all patients were removed from the ambulance and attention was given them by the medical officers there on duty. These medical officers usually numbered from four to six, one of them being an orthopedist. Nearly all splints needed readjustment, and many cases of fractures had not been put in splints before sent to this station because of the limited facilities for such service at the most advanced posts and the great number of casualties occurring at times. Nearly all antitetanic serum was administered at the ambulance company dressing station.⁶

Evacuation of patients from the dressing station to the field hospital was effected by the motor ambulances of the company operating the station. By this arrangement a perfect liaison was maintained at all times between the regimental surgeons and the section headquarters, as well as between the main dressing station and the field hospitals.

The practice followed by the regimental surgeon, of notifying ambulance section headquarters of number, location and character of wounded reduced to the minimum half loaded ambulances—an important item when the front was active.

The rate of flow of casualties through the dressing stations depended entirely on the resistance encountered by the combatant troops; during a period of 27 days, when the division was on the offensive, the daily number varied from 52 to 931.⁶ Likewise, the length of time consumed in transporting wounded from the front lines to field hospitals was subject to wide variation, dependent on the rapidity with which the troops were advancing, road conditions, whether day or night, and amount of traffic. It averaged five hours from the front lines to triage or field hospital during the operation of the 3d Division on the Marne and two and a half hours for the 27 days that division spent in that of the Meuse-Argonne area.⁶

The following orders concerning field hospital service were published in the First Corps, September 3, 1918.⁷ In this corps, the divisional triage was operated at a dressing station, staffed by the ambulance company section and such others as the consultants, detailed to that formation.

1. Field hospitals will be utilized as follows during periods of activity. This applies particularly to open warfare where rapid changes are probable. In sector warfare which is practically stationary, location of field hospitals need not follow this plan absolutely, especially as to location, which will be determined by the terrain, buildings available, proximity of evacuation hospital, and other considerations.

2. The four field hospitals of a division will be placed together if conditions of the terrain permit. They will always be plainly marked by the Red Cross emblem in order to protect them from enemy fire. Placing the field hospitals together has been tested in actual open warfare and found to have certain definite advantages: (a) They are much more easily located by ambulance drivers. If located at separate points, depending upon the character of the service they are intended to furnish, ambulances are apt to wander about and have great difficulty in locating their particular hospital. This of course is especially true in new country with which drivers are not familiar. (b) The administration of the hospitals is much simplified by being concentrated at one point. (c) Assistance from the field hospital in reserve is always immediately available for whichever unit may have need of such assistance.

The field hospitals should be placed as close to the ambulance dressing station as is reasonably safe.

3. The field hospitals will be utilized as follows: (a) Gas hospital. (b) Hospital for nontransportable wounded. (c) Hospital for minor sick, including skin and venereal diseases. (d) One hospital in reserve.

4. *Gas hospital.*—One field hospital will be utilized as a gas hospital. To this hospital will be sent all the gas cases from the triage. Therefore, facilities must be provided to give them the necessary special treatment required—proper bathing, alkaline treatment, administration of oxygen, if necessary, venesection. * * *

5. *Hospital for nontransportable wounded.*—One field hospital will be utilized for the care of nontransportable wounded. This hospital will be supplied with surgical teams, female nurses, and an X-ray outfit, in order that proper surgical treatment and care may be given these cases. To this hospital will be sent direct from the triage only such cases whose transportation farther to the rear will probably mean death. In past experiences, these cases have usually comprised three classes: (a) Sucking chest wounds. (b) Perforating abdominal wounds. (c) Severe hemorrhage cases.

Head and spinal cases stand transportation better before operation than after and should therefore not be stopped here. There has been a tendency in the past to retain at this hospital seriously wounded cases who, however, would be able to stand transportation to the evacuation hospital. This must be discontinued. Only such cases will be retained as are actually nontransportable. When available, the corps surgeon will detail to each division an assistant consultant in surgery, who will be the sole judge of what cases will be operated at this hospital and what cases will be transferred to the evacuation hospital. A shock team will be on duty at this hospital for treatment of all shock cases both pre and post operative.

6. *Hospital for minor sick including skin and venereal diseases.*—To this hospital will be sent only those cases which are minor and which will be fit for duty within four days. * * *

7. *One field hospital in reserve.*—This will be used to give assistance where needed, both in personnel and equipment. A detail of 1 medical officer and 10 enlisted men will be sent to the ambulance dressing station to give the necessary preliminary bathing and alkaline treatment to mustard-gas cases as may be deemed necessary by the division medical gas officer on duty at this station. This detail must, of course, be relieved by another detail at regular intervals, to allow the former to secure the necessary rest and food.

8. * * *

9. *Exchange of supplies.*—It is of utmost importance that a systematic exchange of supplies as litters, dressings, splints, blankets, hot-water bottles, operating from the front line all the way back to the final hospital to which the patient is delivered, be instituted at once. When a patient is placed in an ambulance, the ambulance orderly must return to the litter bearers a duplicate of all supplies furnished the patient. Similarly, when the ambulance delivers the patient to a hospital, the orderly must get from the hospital a duplicate of all supplies furnished the patient. This must operate at every point where a change of transportation is made. Otherwise the supplies at the front-line positions will soon become exhausted and unnecessary delay and suffering result. If this system of exchange is enforced, there is a constant steady stream of all necessary supplies going forward and there need be no interruption in the care given to wounded or other casualties. * * *

Methods employed when troops were engaged in trench warfare differed considerably from those followed when they attacked in the open, and for this reason trench warfare and open warfare will now be considered separately. It should be explained, however, that, when troops holding trenches were heavily attacked, the difference was less marked. Yet always in trench warfare, casualties were more localized and Medical Department formations were more fixed, better equipped, and better protected than they were when the troops they accompanied were on the offensive.

TRENCH WARFARE

CARE OF CASUALTIES IN COMPANIES, BATTALIONS, AND REGIMENTS

COMPANY AID

In old, quiet, defensive positions, the front line usually was little more than a line of outposts lightly held, the remainder of the troops being in support trenches or in reserve. Sometimes, as in the 5th Division in the Vosges, a battalion thus held a frontage of 5 km. (3 miles).⁸ One battalion surgeon was usually on duty with the advance troops, while the other was in charge of the battalion aid station. Two enlisted men of the Medical Department were normally assigned to each company at the front and staffed what was, in effect, a company aid post located at some sheltered point and near a communicating trench to the rear.⁹ Frequently, it was provided with some equipment such as litters, splints, bandages, dressings, whale oil, sodium bicarbonate and a few drugs. The Medical Department enlisted men were provided with ammonia ampules and instructed in their use, and were also instructed in other elements of first aid. They were ordered promptly to adjust the respirators of disabled men who had been gassed. The location of the collecting post (company aid post) was made known to the company concerned and here first aid usually was given. Often, however, especially if casualties were few, one of the medical attendants stationed here would leave to give aid to a man where he fell. The function of the company aid post was to give primary, or, if the patient had already received this, supplementary first aid, to return to duty men not in need of further treatment, and to prepare other wounded men for evacuation, grouping those who were able to walk. Professional aid, as given by the battalion surgeons concerned, was limited in general to the control of hemorrhage and to the application of dressings and splints. Those disabled in the front line habitually were brought to the company aid post (if necessary, on litters carried by company bearers), except when their wounds had been dressed where they fell and it was easier to remove them from that place to a battalion aid station.

BATTALION AID STATION

Patients were taken to the battalion aid station from company aid posts or from the line. It usually was located in a support trench from 240 to 500 yards from the front and so as to be readily accessible from all parts of it that the station served. (In the 89th Division aid stations for the support lines of reserve also were provided.)¹⁰ Normally, there was one battalion aid station for each battalion, and it was located near the communicating trench to the rear, utilizing any shelter available. Sometimes it was near the battalion post control, in order that the surgeon might be in close touch with his commanding officer, but in some divisions this was expressly forbidden on the ground that juxtaposition of the two aggravated the danger to both.¹¹ Sometimes it was much farther back than the distance mentioned above, in order that it might be accessible to ambulances. When the distance was more than 1,000 yards (in the 4th Division 800 yards) relays of litter bearers were utilized.

stationed at posts that distance apart. Portage for 1,000 yards was the limit of a squad's endurance.¹² When available, four litter bearers were employed to bring patients to the battalion aid station, and if the moving squad was invisible to the enemy lines the litter was sometimes carried shoulder high. This portage over rough ground, through winding trenches, and by trails deep in mud was slow, arduous, and, when the group was exposed to enemy fire for a considerable time, hazardous.⁹ After 10 or 12 hours of such work under shell fire, bearers often became nervous and exhausted. While habitually the battalion aid station was located, if possible, at a point accessible by ambulance, this desideratum was regarded of secondary importance, the primary essential being such proximity to the front that the wounded would receive prompt attention.



FIG. 13.—Battalion aid station, 101st Infantry, 26th Division, Bois de la Voisogne, France, May 31, 1918

The battalion aid stations of the American Army in fixed positions were modeled on those of the British and French.⁹ These were rather elaborate installations, for heavy bombardment often necessitated that they retain patients until after dark. In general, such a station as constructed by our allies, and taken over by our troops when serving with them, consisted of a series of communicating rooms, 2 meters (6.5 feet) high and from 2 to 4 meters square (6.5 to 13 feet). One room was for office purposes and the reception of patients, one for the application of dressings and for shock treatment, one for the battalion surgeon, one for stores, and one or more for the personnel. It had 2 by 2 meter (6.5 by 6.5 feet) galleries, with two or three tiers of improvised litter racks, which sometimes accommodated 30 patients, but rarely more than 12.⁹ Usually, in a separate dugout at one side, were two rooms for the bathing, emergency treatment, and re-clothing of gas cases. The doors to these aid-station dugouts were generally 3 feet wide and

were protected by two tight-fitting blanket curtains placed at least 8 feet apart. These curtains were soaked with alkaline or sometimes hexamethylenamine solution, and were so adjusted that they would fall into place upon touching a release. The first curtain was intended to be shut down before the second was opened. The descent to the battalion-aid dugout was found to be preferably at an angle of 30° ; but as dugouts used by line troops were used commonly for aid stations, Medical Department personnel soon adopted the same angle of ramp as that used by line troops. In such cases a litter chute was often made of greased planks nailed on either side of the stairs leading down into the station. An important item of station equipment was a water storage tank or well. Usually, light was furnished by petroleum lanterns, but a few of these dugouts were lighted by electricity. Each attendant generally possessed a flashlight.⁹

To prevent water dripping into them, dugouts usually had corrugated iron ceilings. Walls were boarded and floors provided. Frequently, ceilings and walls were calcimined, or at least whitewashed. Some dugouts even had dining rooms. The depth of a dugout below the surface of the ground was usually 10 to 12 feet on an average, but in localities subject to shelling by heavy guns a depth of 20 feet was preferred. Dugouts situated on the higher level were unprotected against direct hits by shells of more than 155 mm. caliber.¹³ Such shells rarely fell on the support trenches except during great activity. Whenever possible, cooking was done below; otherwise, food was brought to the stations in marmites. Coke fires were made in braziers; ventilators, with dampers to exclude gas, tapped the principal rooms. While remarkable ingenuity was displayed in making these dugouts comfortable, it should be understood that the description given above is for the most elaborate ones, and ordinarily they were much simpler.

On taking over French or British sectors, or in occupying them temporarily, the American Army fell heir to these subterranean battalion aid posts. While battalion aid stations actually constructed by American troops were similar to those described above, they usually were much less pretentious. The medical personnel of all our divisions received instruction in the subject of constructing them from the divisional engineers or at the Army sanitary school. In some cases our aid stations would accommodate 25 or 30 patients, but usually the number was 10 or 12.¹³

PERSONNEL

The personnel on duty at a battalion aid station consisted normally of one medical officer, a dental officer if available, and from four to six enlisted men of the Medical Department.¹¹ These usually were supplemented by two runners and one or more litter squads assigned from an ambulance company, the number of these squads being increased if unusual activity was anticipated.¹¹

SUPPLIES

Equipment, beyond that furnished by Supply Tables, to a battalion included at least two Thomas splints, a shock table for warming patients,

two 500-liter oxygen tanks, suits of overalls, with gloves and masks, for attendants caring for gas patients, gas fans, and alkalies and sprayers for attendants to use in cleaning out the galleries to which gas had penetrated.¹¹

Supplies were brought forward as far as possible by battalion medical carts or other vehicles. They were replenished by one of several systems.¹⁴ That mostly commonly used required empty ambulances to carry forward to the battalion station or the ambulance head articles similar in kind and number to those they had brought back with patients. Another system was that of having the battalion surgeon send, by runner to the dressing station, a list of the articles he desired. A third method was that of the automatic replacement first mentioned, supplemented, as required, by the second. The first system worked well except during heavy engagements, when ambulances could not carry forward all supplies required. Then the supplies they could not transport had to be brought forward in trucks. The medical supply carts were not much used. At times of stress there was occasional shortage of litters, blankets, and large dressings, due in the majority of instances to the fact that responsible officers at the front had not foreseen their needs or that transportation was inadequate.¹¹ There was always a large surplus of these articles constantly available in depots.¹¹ If ambulances and trucks could not reach battalion aid stations, supplies were carried forward by litter bearers from the ambulance head or the dressing station.

In order to reduce transportation of equipment, on the relief of an organization in a sector, much of that in its medical dugouts was sometimes left behind when the division moved.¹¹ The 1st Division on one occasion thus transferred to its replacement matériel sufficient to fill several freight cars.¹⁵ These "trench stores" usually consisted of all supplies and equipment which would not normally accompany troops in a war of movement.

Service at battalion aid stations included control of hemorrhage, application or readjustment of dressings and splints, administration of antitetanic serum and of morphine, if indicated, emergency treatment of gassed cases, and the preparation of field cards or diagnosis tags. When it was possible to do so, hot food or something hot to drink was given to patients. Slight cases of illness were treated and returned to duty.

The following is taken from the report of the division surgeon, 3d Division:¹⁶

The treatment and evacuation of the wounded from a quiet sector, either with or without a perfected trench system, was not difficult. The wounded were few in number: and as enemy fire was light, first-aid dressers and litter bearers had much freedom of action. Personnel and transportation were more than adequate. At the battalion aid station, gassed cases could be stripped, bathed, and redressed, hot drinks and food given to all, shock cases recuperated, and many comforts administered.

When, however, a quiet trench sector was converted into an active one, the situation became very different from that just described. Time, personnel, supplies, and transportation, heretofore fully adequate, became insufficient, and the character of the work performed at the battalion aid station had to be modified accordingly, influenced chiefly by the number of patients arriving, extent of shelter available, and promptitude of ambulance service. For example, if ambulances were waiting, shelter inadequate for all

the wounded, as along the Marne, and the action was not severe enough to preclude evacuation, disabled were held only long enough to receive the necessary first-aid and the anti-tetanic serum.

In order to expedite service, patients were classified into several categories, each of which was cared for according to a definite plan. In the 3d Division the classification was as follows: (1) Very slightly wounded who were able to return to the line; (2) slightly wounded requiring evacuation; (3) seriously wounded; (4) patients with fractures; (5) severely wounded with considerable attendant shock; (6) gassed patients; (7) psychoneurotics; (8) sick.¹⁶

The patients in the first class were dressed and retained for the time being. Some of those in the eighth class also were retained. All others were evacuated. Usually those in the second class were dressed only with first-



FIG. 14.—Adjusting improved splint on a litter patient, Broussey, France, April 20, 1918

aid packets, and most of them were able to reach the ambulance dressing station unaided. Wounds of severely injured patients were lightly painted with iodine and an adequate dressing was applied, antitetanic serum, morphine, and, if needed, a stimulant, were administered, and the patient was evacuated as soon as possible. The dosage of serum was 500 units: that of morphia usually 16 mgms. Their administration was noted on the diagnosis tag, and often the letter "T" was painted with iodine on the forehead of a patient as soon as he had received the serum.¹⁶

Fractures were immobilized here by the use of Thomas splints, if these had not already been applied. If a patient had been splinted, the splint was examined and, if necessary, it was readjusted. These patients were handled as little as possible and often placed in the ambulance on the same litters on which they had been brought from the front. Patients in severe shock were held, if possible, until reaction occurred. They were wrapped in

blankets, given strychnine hypodermatically, and hot coffee or chocolate. As a rule, they reacted well.¹⁷

The most difficult patients proved to be those claiming to have been gassed.¹⁷ It was impossible for the surgeon to diagnose properly and promptly all patients claiming disability from this cause, for he had no means of knowing whether a doubtful condition was one of delayed gas poisoning or gas fright.¹⁷ Some suspected cases of gas poisoning were held for observation and cared for in dugouts, basements, or cellars. After a few hours' rest, almost all patients, doubtfully gassed, were able and willing to return to the front.¹⁸ Frank gas-intoxication patients, received during very active operations, were evacuated immediately, taking precedence over all others, for at such times it was impossible to strip and bathe them at the battalion aid station. Not only was personnel inadequate, but sufficient water was unobtainable, and they could not be retained with other patients because of diffusion of gas from their clothing. The psychoneurotics and sick were evacuated if their condition demanded it. Of the former, patients with gas fright were the most numerous and, as stated above, most of them were returned to the line.¹⁷

A battalion aid station's activities in a moderately active defensive sector, as described, were often somewhat modified by changed conditions. The administration of antitetanic serum was not always possible, as sometimes there was none on hand.¹⁷ At some places no fires could be built to prepare hot drinks.¹⁷

During periods of intensive bombardment, when the trenches and back areas were subjected to destructive fire from high-explosive shells, patients usually were moved under cover of darkness by ambulances which went directly to the battalion aid stations, if this was at all possible. Removal of patients by daylight, whether by litter or ambulance, under such circumstances would have exposed all concerned to needless risk. By day, it was impossible for ambulances to approach nearer to the front than 3 or 4 km. (1.8 to 2.4 miles) and removal by litter then would have been unwarrantable, though litter bearers frequently ran forward, at great risk, during a lull in the enemy fire. When roads were subject to interdiction fire, patients wounded early in the day did not reach hospital for 18 hours or more. Though, under such circumstances, they received every attention locally, except surgical intervention, the period of detention, dependent on military conditions, as a systematic procedure, was cut to a minimum in order to reduce the danger incident to the development of gas-forming bacilli in wounds. This danger, as noted in other chapters, had a profound influence upon the organization, equipment, location, and service of all medical units as far back as the base hospitals, for surgical interference within 12 hours proved highly desirable and, in the case of extensive wounds, essential.²¹

The French, in order to meet the requirement for early operation, made provision for a considerable amount of surgical work in their battalion stations, and when the sector concerned was not very active this was accomplished, though not so well as in a fully equipped hospital.²⁰ The Americans

did not follow this practice, and orders were issued that no operations be performed at such advanced posts.¹⁹ They believed the French practice caused dispersion of medical forces, and preferred to take some risks with the ambulance service in order to secure for a patient early operation at a better-equipped formation.¹⁹ Although ambulances were sometimes lost, their use as far forward as possible and wherever possible presented many advantages. Patients carried by them suffered less danger than those conveyed by litter, for the period of exposure to fire was less. There was a great saving of bearers, and the time of transport was greatly shortened.

THE REGIMENTAL AID STATION

In many divisions the regimental aid station was soon discontinued, while in others it shrank into a formation of very minor importance whose chief function was to give first-aid and medical attention to the regimental headquarters detachment.²⁰ Definite benefits accruing from discontinuance of this station were saving of time and labor, release of medical personnel for duty farther forward, and reduction in the number of points where patients were collected and relayed.

The term "regimental aid station" persisted, it is true, but it often indicated a very different organization from that contemplated in orders before the war began. Frequently it signified merely the station of the regimental surgeon, the location of his office and the liaison point for the medical service of the regiment.²⁰

At the time our Field Service Regulations were drafted the regiment was approximately the size that a battalion assumed during the war, new tables of organization having been published,²¹ so that the battalion station in point of fact performed the service formerly intended for a regimental station. When employed as originally contemplated, the regimental aid station was similar to the battalion station which has been described above, though it was somewhat larger and more elaborate.²² Sometimes the regimental station was the liaison point between an ambulance company and the battalion aid stations, but more frequently the former maintained direct contact with the battalion aid station by assigning two of its men as runners to each battalion station it served. When the regimental aid station was not used, the dressing station frequently was established at the tactical point which it would have occupied.¹¹

THE SANITARY TRAIN

The sanitary train of each division consisted of train headquarters, an ambulance company section, a field hospital section, eight camp infirmaries, and a divisional medical supply unit.²³ Three of the four companies in each of the ambulance and field hospital sections were motorized, the fourth being animal drawn.

AMBULANCE COMPANIES

Headquarters of the ambulance company section of the sanitary train habitually was located near that of the field hospital, except during active

periods, when the director of the ambulance companies was usually to be found at the regulating station or at one of the dressing stations.

Each ambulance company had the personnel of the Tables of Organization, and, presumably, 12 ambulances. The company was subdivided into two sections: One operated a dressing station or stations, and, if need be, removed wounded thereto by litter; the other operated the ambulances, whether working in front of the station or in the rear of it.²⁴ Evacuation from fixed trench positions into other fixed formations to the rear was usually a comparatively simple procedure, though it required constant surveillance and adaptation to changing military conditions.

LITTER-BEARER AND AMBULANCE SERVICE

As noted above, in active operations, one or two litter squads and two runners from an ambulance company were frequently attached to each of the battalion aid stations. When a sector became active the number of these squads was greatly increased, and when unusual action was imminent or was in progress, certain divisions, e. g., the 4th, assigned to duty with regiments all the ambulance company personnel that could be spared for the purpose.²⁵ Ambulance companies, especially those whose vehicles were animal-drawn, also furnished replacements for casualties in Medical Department personnel serving regiments and batteries. As the ambulance head often was located considerably farther forward by night than by day—as, for instance, in the 1st Division at Seicheprey—usually actually reaching the battalion aid stations after darkness fell, nonambulant patients were sometimes held at these stations until ambulances could reach them;²⁶ but it was a general practice to remove patients promptly, especially the most seriously wounded, if battle conditions permitted. As previously stated, if the distance from the battalion aid stations to the dressing station was more than 1,000 yards, relay posts were established similar to those in advance of the former. At each of these, one or more litter squads was stationed. In the 4th Division each of these relay posts was under command of a noncommissioned officer, and the distance between them was 800 yards.²⁷ Such posts were not usually necessary, however, if wheeled litters, or motor cycles with side cars, were available and the terrain permitted their use; but in the Vosges, where the distances were exceptionally long between battalion aid stations and the ambulance head, the 5th Division used these vehicles and also developed relay posts into miniature emergency stations.²⁸ The Anould sector, which this division then occupied, was very rugged, and wheeled litters, either horse-drawn or hand-pushed, proved invaluable. Sometimes two or more were used tandem. Conveyances of this type were employed to advantage also at odd times in places where their use was reasonably safe and other wheel transport was not practicable. For instance, the 37th Division used wheeled litters to carry dressings forward to battalion aid stations inaccessible to ambulances.²⁹ Motor cycles with side cars also at times were used to advantage, those of English make proving preferable, as they were sturdy and usually had 8-horsepower engines.³⁰ The 35th Division in the Vosges used the French equipment identical with the Spanish mule litter for that sector.³¹

When a division occupied a quiet, defensive sector and had its full complement of vehicles, it usually had one of its motorized ambulance companies in active operation, the second in support on the alert, the third in reserve, and the fourth at rest, while cleaning its vehicles.³²

Many divisions, e. g., the 28th, organized motor repair parks.³³ The animal-drawn ambulance companies made short hauls from battery positions and from points inaccessible to motor ambulances and between the field hospitals when they were closely grouped. Its personnel often supplemented that of other Medical Department units at the dressing station and at points in advance of it, and its wagons sometimes carried fuel and supplies to the dressing station or performed other miscellaneous services. Often only two animals were provided for each ambulance of this company, and animal-drawn vehicles proved too slow and presented too large a target to be used to great advantage near the front in trench warfare.³⁴ Also, if the animals were required to haul the load necessary in active service they soon became exhausted, particularly if the sector was rugged or deep, and if the roads were in bad condition.

In general, the distribution of ambulances in trench warfare was as follows: In advance of the dressing station established by the ambulance company (usually between 3,000 and 6,000 yards from the front) two or three ambulances were parked at one or more points called "ambulance posts" or, more colloquially, "cab stands."³² In a deep, narrow sector there was usually but 1 of these posts, but the 42d Division in the Baccarat sector used 11 of them, with 1 ambulance at each stand.³⁵ These posts were at the points farthest forward where vehicles would be reasonably safe, and beyond that, toward the front, was the ambulance head, the farthest point to which ambulances could reasonably go; sometimes, if the terrain permitted, these points coincided. Distance of penetration beyond the ambulance posts was dependent upon military activity, darkness, and road conditions. While after night-fall the ambulance head was frequently advanced to the battalion aid station, during the day it was usually one or more kilometers in rear of it. In some divisions, as, for example, the 1st,³⁶ an ambulance on call moved up after dark from its ambulance post to the battalion aid station or to the ambulance head, and after taking its load to the dressing station returned to its post. If roads and the military situation permitted, ambulances visited battalion aid stations daily as a matter of routine. In some divisions, as soon as an ambulance had delivered its patients at the dressing station it picked up another load of patients and went on to a field hospital in the rear. It was soon found, however, that service in advance of the dressing station could be performed best by the light Ford cars, which could go through mud and demolished roads more easily than other motor ambulances, while on the better roads in the rear of the dressing station, the heavier and more comfortable G. M. C. ambulances were preferable. This use of transport, first developed in the 1st Division and soon adopted by others, was often spoken of as "ambulance circuits," one set of ambulances making round trips between their posts, battalion aid, and dressing stations, while another set made round

trips between the last mentioned and the field hospitals.³⁶ In the early days of American combat activities, before evacuation from field hospitals was taken over by corps and army surgeons, there was a third circuit by ambulances under control of the division surgeon. This comprised the round trip between field and evacuation hospitals.^{36, 37}

During the first operations in which the American Army participated the intradivisional and extradivisional services of ambulance companies were not clearly differentiated. Evacuation ambulance companies were at that time attached to divisions, supplementing other ambulance companies of the sanitary train and operating interchangeably with them. Though the system was satisfactory for conditions then existing, it was not suitable for open warfare as well, for which reason the following system was adopted when the First Army was organized.^{37, 38}

Division ambulance companies will transport patients from battalion or regimental aid stations to the triage and division hospitals; an ambulance station will be established midway between aid stations and triage; a reserve of ambulances will be stationed there, sending one to the front to replace each one returning with patients. The loaded ambulance will return to this station after delivering its load at the triage.

Evacuation ambulance companies will move patients from the triage and field hospitals to evacuation hospitals and loading platforms.

The adoption of this system, which equalized labor and allowed time for rest and repairs, gave such satisfactory results that it was applied to each division successively entering the Toul and Luneville sectors.³⁸

Back of the dressing station each division habitually maintained a relay ambulance post and regulating station, at a point past which all vehicles used for transporting wounded would travel on their way between dressing station and field hospital. At this place were parked most of the vehicles of the company on active duty—if these were not distributed at the ambulance posts—and here the headquarters of the company in question was located. As one loaded vehicle passed on its way to the rear, an empty ambulance moved to the next station ahead, thus keeping up a circuit of empty vehicles to the front.³⁴ If more ambulances were needed, the regulating officer sent them forward from the park at his station. Though this was the most popular method of locating and operating ambulances, it was modified in many ways, in greater or less degree, under varying circumstances. The 5th Division, in the Vosges,³⁹ when its sector was quiet, kept an ambulance at each regimental aid station and held five in readiness in the company park near the field hospitals; but when an unusual action was imminent it disposed of its ambulances as follows: From 3 to 4 at ambulance posts, from 3 to 6 at a point midway between them and the field hospitals, and the remainder near the latter.³⁹ Only under exceptional circumstances in trench warfare, as in the Chateau-Thierry and Champagne areas, was it necessary to use trucks for removing the wounded. In such emergencies every kind of vehicle returning from the front was utilized, ambulances being reserved for the severely wounded. The intradivisional service by trucks was employed especially between dressing stations and field hospitals.⁴⁰



FIG. 15.—Dressing station operated by Ambulance Company No. 137, Amperbach, Alsace, August 31, 1918

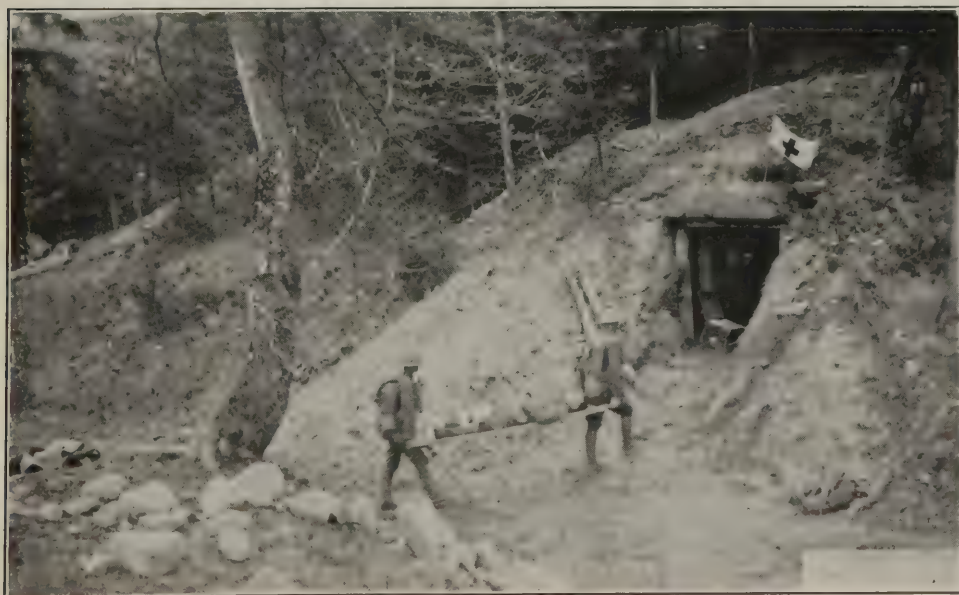


FIG. 16.—Dressing station at Betricamp, France, April 26, 1918

THE AMBULANCE COMPANY DRESSING STATION

Each division regularly established one or more dressing stations at a point or points accessible from all parts of the front served and also accessible to vehicles from the rear. Battalion aid stations rarely evacuated direct to field hospitals and even more rarely to evacuation hospitals. Dressing stations functioned properly only when placed on natural evacuation lines, as bearers almost inevitably carried casualties to the nearest point where relief could be given. These stations were usually between 3,000 and 6,000 yards from the front, and, if possible, at relatively protected points, such as in buildings or cellars; sometimes dugouts were constructed like those for battalion stations, but they were more elaborate. Thus in the Baccarat Sector the 42d



FIG. 17.—Gas-proof shelters for dressing stations, 42nd Division, near Bodonville, Baccarat Sector, April 29, 1918

Division provided three gas-proof shelters for dressing stations from $2\frac{1}{2}$ to 3 miles behind the front, each shelter accommodating 20 patients, with facilities for bathing, treatment of shock, hemorrhage, etc.⁴¹ The number of dressing stations varied from one to three, according to the width and activity of the sector. If the sector was narrow only one station was established, as a rule, to be reinforced if need be by men detailed from other ambulance companies. Occasionally an advance dressing station was established, but in positional combat this substation was relatively unusual, being provided usually only when vehicular traffic was not possible for some distance back of the front. When an advanced station was used, it frequently was from 1,500 to 2,000 yards from the lines, and the main dressing station about the same distance in rear of it, at the ambulance head. If an advanced dressing station was used, its personnel averaged 1 officer and from 8 to 16 men; that of a main dressing station was 2 to 6 officers and from 12 to 25 men. In some divisions one of

the officers attached to the dressing station was charged with maintaining contact with the troops which the station served and with supervision of the litter-bearer service between it and the battalion aid station, while in others, e. g., the 2d Division,⁴² an officer was especially assigned to the same service without being assigned to the dressing station.

Organization of the dressing station varied considerably, naturally being most elaborate in the comparatively few divisions which used this formation as a triage or sorting station. In the 42d Division, which employed its dressing station as a triage, the organization was that described below.⁴³ This description applies especially to the dressing station, as that division developed it in open warfare, but is given here as the organization was inaugurated in trench sectors. The station consisted of the following departments:⁴³

(1) Receiving and forwarding department, subdivided into two sections concerned with (a) transportation, and (b) sorting and checking of patients. The former section consisted of a transportation officer and a sergeant, who supervised the dispatch of ambulances both to the front and to the rear, controlled the number working in either direction, and supervised the loading and unloading of patients. The last-mentioned service was performed by a group of eight litter bearers. A sorting and checking officer examined all patients on admission, returned to the front those needing no further treatment, and distributed others to proper departments within the station, designating which patients required immediate attention. He was assisted by a few enlisted men who, under instruction from a commissioned officer, gave nourishment, adjusted bandages to minor injuries, administered antitetanic serum, and attended to the comfort of patients. Those not requiring special treatment in this department were held until evacuated, and unnecessary handling of patients was thus avoided. Two or more clerks listed all casualties and checked up the administration of serum.

(2) The general dressing room was manned by from 2 to 4 medical officers and 4 competent noncommissioned officers, all of whom were engaged in adjusting or applying dressings, administering morphia and antitetanic serum, if these had not already been given. In addition to the foregoing, two men were engaged in sterilizing and filling syringes with antitetanic serum.

(3) The orthopedic department cared for all fractures, readjusting or applying splints as required, and giving any other treatment needed, including that for shock. Personnel of this department consisted of the division orthopedist and two trained enlisted assistants.

(4) The gas department was located in a room, not communicating with any room for wound-dressing purposes. Here, under direction of the divisional gas officer, gassed patients were stripped, bathed, and reclothed with such raiment as could be obtained from the salvage section.

(5) A complete company kitchen was kept in operation day and night, supplying hot food and hot coffee to patients, duty personnel, and casuals. This service proved highly important, especially in cold and wet weather.

(6) The medical supply department of the station pooled the property of companies serving it, replenishing by issues from the divisional medical supply unit.

(7) The salvage department collected all equipment no longer needed for patients, and from it issued necessary supplies such as blankets and canteens, the latter being used as hot-water bottles.⁴³

The personnel operating the dressing station triage of the 42d Division was drawn from all four ambulance companies and was assigned in 12-hour shifts, if the rate of admissions did not require longer hours of duty.⁴⁴

When a dressing station was used as a triage, the division orthopedist, psychiatrist, and gas officer were regularly attached to it, together with an officer possessed of good surgical experience and judgment,⁴⁵ and sometimes an understudy was assigned for the relief of each of these officers. Usually a dressing station, used as a triage, was located at the point farthest forward, where, with reasonable safety, ambulances could be concentrated, and these were grouped near it. In the Baccarat sector, at one time, the slightly wounded, because of tactical disposition, could be sent direct from the dressing station to an evacuation hospital and all others to the designated field hospital (see order quoted, p. 386), but usually all patients were sent to the appropriate field hospital.

As the great majority of divisions did not use the dressing station as a triage, the personnel of the station, normally, was less numerous than that of the station just described, and was habitually drawn from but one ambulance company; the equipment was less elaborate and the organization was simpler. In all respects, however, there was great mutability and flexibility in all such stations, allowances of personnel especially being changed frequently to meet varying needs.⁴⁶

At dressing stations the sick and wounded were classified according to the nature of their disability and its degree. By the first classification, injuries caused by gas, miscellaneous sickness, psychic disorders, venereal diseases, skin diseases, and convalescents were separated. The second classification, pertaining to the degree of disability, ranged from malingerers to fatal wounds or illness. It had certain more or less arbitrary and fluctuating subdivisions. For example, the wounded often were classified as "very slight," "slight," "serious," and "nontransportable." Practical application was given to this gradation, for patients in the first class were returned to duty; those in the second class were sent to hospital, walking or sitting; those in the third class were sent recumbent to hospital; while patients in the fourth class were held until they rallied and then were evacuated with exceptional care. Similarly, the sick, the gassed, and those suffering from gas fright were classified either as "seriously disabled," who should be retained until they rallied or be evacuated at once, and the "slightly disabled" or "subjectively affected," who could be returned to duty. Men claiming mental or nervous disability were especially difficult to classify, for some of them were malingerers, others were slightly affected but magnified their symptoms, and a few were bona fide cases of disability.⁴⁷

Whether used for triage purposes or not, at the minimum the functions of a dressing station were to receive and classify patients, give emergency treatment—that is, control hemorrhage, treat shock and gassing, readjust splints, administer antitetanic serum if it had not already been given, and morphine if indicated—supply nourishment, group the disabled, and forward them to their designated destination. Yet, normally, the last was the work of the triage hospital, and as a matter of fact, sorting of patients at the dressing station with a view to direct distribution to appropriate hospitals was unusual except in the divisions of the First Corps,⁴⁶ or when the seriously wounded were sent direct from dressing station to the proper field hospital without passing through the triage hospital. Few operations were performed at the dressing station, and these were minor ones; but they sometimes included closure of aspirating chest wounds by a few silkworm-gut sutures, and when absolutely necessary, ligations.⁴⁷ If a hemorrhage was not checked by operation, the wound was packed and a tourniquet applied which was left loose in place after hemorrhage had ceased. Ambulance orderlies were instructed to tighten the tourniquet, if necessary, when en route to the hospital.⁴⁷ Patients in shock usually were held until they rallied, and the sick were retained until a full ambulance load of them could be sent back. Soldiers not incapacitated for performance of duty, after receiving all necessary attention, were returned to their organizations. The field medical cards of patients admitted were made at the dressing station and records of them made, if other work did not prevent. Patients able to walk to field hospitals—about 40 per cent of the total—were sent back to them in groups.⁴⁸ In practically all divisions the dressing station was also the Medical Department supply point for regiments and batteries. Supplementary to dressing stations, rest stations for furnishing nourishment and medical aid were established by the 4th Division along its evacuation routes, in connection with relay posts.⁴⁹

Though the foregoing description gives in general terms the usual operation of a dressing station, certain individual methods were employed by the several divisions at different times; but these were transient or of relatively minor importance. Considerable mutability in personnel, matériel, organization, and thoroughness of treatment characterized practically all these stations, for in all these characteristics they were influenced profoundly by military conditions varying from quietude to intense activity.

FIELD HOSPITALS

The field hospital section of the sanitary train consisted of four of these hospitals,⁵⁰ each accommodating 216 patients. The personnel authorized for them is noted in Tables of Organization in the Appendix (p. 1054), but in the World War this was augmented by the assignment of divisional specialists and, as occasion required and resources permitted, of operating and shock teams. The equipment of all these hospitals was at first identical, but later—as noted below—it became considerably diversified when the field hospitals were specialized. In some divisions field-hospital facilities for nontransportable wounded were further increased by the assignment to them of mobile surgical units, but

as only 12 of these formations became available before the armistice, the result was that the plan of supplying one to each combat division did not fully materialize.⁵¹

In trench warfare, field hospitals were located from 10 to 15 km. (6 to 8 miles) behind the front, or frequently farther back, in order to be beyond range of ordinary shell fire. The distance varied considerably, being influenced by proximity to the front of suitable buildings, and considerations similar to those affecting the location of evacuation hospitals (q. v.), especially convenient roads and availability of water and fuel. In order to utilize buildings to the best advantage, a field hospital occupying them was at times somewhat scattered, but whenever possible near-by buildings were used.



FIG. 18.—Field Hospital No. 112, 28th Division, Cohan, France, August 12, 1918

Often field hospitals were comfortably, even luxuriously, established in towns, châteaux, or barracks, and when such hospital sites in buildings were taken over from the French, many supplies were sometimes transferred with them, thus expediting putting our field hospitals into operation.⁵²

It should be remarked here as affecting field hospital shelter that, in the early days of American service in France, the use of tentage near the front was disapproved, on the ground that it was readily visible to enemy aviators and betrayed the presence of troops.⁵²

Profiting by developments in the medical service of the 1st Division at Cantigny, field hospitals in all divisions rapidly became specialized.⁵² Gen-

erally speaking, one developed into a hospital for nontransportable wounded, and a second into a hospital for gassed patients, with corresponding changes in equipment, the others retaining their original purpose and their original equipment; but there were many modifications of this plan. Very generally the divisional triage or sorting field hospital also received the seriously wounded and sometimes the gassed.⁵² Almost without exception only one triage was maintained by a division in positional warfare, but the 26th. in the Toul sector (April and May, 1917), having a frontage of 17.6 km. (11 miles), then operated two, one behind either flank.⁵³



FIG. 19.—Field Hospital No. 125, near Jaulgonne, France, July 29, 1918

In a quiet trench sector a common method of dividing the field hospitals was the following: (1) Triage and care of wounded and gassed patients; (2) sick; (3) skin and venereal diseases; and (4) reserve.¹¹

Frequently the last was used as a convalescent camp, to care for transportable patients, or to supplement one of the other field hospitals, as required. When not actively operating, its personnel was often assigned to one of the other field hospitals. Under these conditions it was the practice to retain in the division field hospitals all patients who were likely to be fit for duty in from 10 days to 2 weeks, or who could be treated here as well as farther to the rear; for example, skin and venereal cases. Then, only those requiring definitive surgical treatment or such of the sick as would require prolonged or exceptionally expert treatment were evacuated.¹⁴

When a trench sector became moderately active, a division often continued to hold its cases of war neuroses, slightly gassed and slightly sick, making such use of its field hospitals as the following: (1) Triage and care of non-transportable patients (wounded or gassed); (2) slightly wounded; (3) sick, slightly gassed, convalescents; and (4) reserve. When called into operation the reserve hospital frequently cared for the gassed cases.¹¹

If the enemy was very active, as in the second battle of the Marne, all field hospitals were opened and utilized as described under the caption "Open warfare," evacuating patients as rapidly as possible.

Selection of nontransportable patients, as contrasted with the severely wounded (for the two categories did not exactly correspond) was difficult and subject to changing standards imposed by the changing military situation. When divisions were actively engaged in trench warfare, as along the Marne and in the Champagne areas, many patients who otherwise would have been retained had to be evacuated.

The reports of the Medical Department activities of the several combat divisions, from which this chapter is largely derived, do not differentiate in their descriptions, except in a few matters such as those noted above, the service of field hospitals in trench and in open warfare. Further information on the subject will be found in the section of this chapter which treats of these units in open warfare. It is only necessary to note here that methods in open warfare were similar to those in trench warfare except that in the former field hospitals usually occupied tents, moved frequently, were employed in a more diversified manner, were more subject to enemy fire, underwent greater strain, and had greater difficulties both in bringing up supplies and in effecting evacuation of their patients.

OPEN WARFARE

CARE OF CASUALTIES IN COMPANIES, BATTALIONS, AND REGIMENTS

In open warfare the problem of caring for the wounded on the battlefield and of removing them to field hospitals was very different from that presented when troops were in the trenches, and its solution proved much more difficult as well as more varying.

COMPANY AID

A company aid post was sometimes established, as in the 90th Division, which located it at or near the company post control;⁵⁴ but very few divisional histories make any mention of this formation in open warfare, though that of the 5th Division noted that two enlisted men of the Medical Department continued to be attached to each company as was the case in the trenches.⁵⁵ When used, this post was located at any shelter available—a shell hole, for instance—and the wounded were brought to it; but much more frequently the wounded were taken to any sheltered place near which they fell, and dressings and splints were there applied. The equipment of the Medical Department men detailed to render company aid was very simple, consisting chiefly of dressings, splints, tourniquets, and stimulants, for it was limited to such

articles as they could carry when troops moved forward.⁵⁶ They placed these articles in any receptacles available, such as pouches, sacks, and gun cases. After dressing a patient they again advanced with the troops to which they were attached.

THE BATTALION AID STATION

In open warfare, even more than was the case in the trenches, the importance of the battalion aid stations tended toward their substitution for that of the regiment. These stations were placed as near the front as possible. In



FIG. 20.—Shell hole where first-aid was administered, 7th Artillery Regiment, 1st Division, Serevillers, France, July 5, 1918

the 2d Division, in the beginning of the offensive against Soissons, one station was located within 50 yards of the enemy lines.⁵⁶ During that operation, battalion aid stations in that division were from 1 to 8 km. (0.6 to 4.8 miles) in advance of the triage hospital.⁵⁷ In the 5th Division two aid stations to a battalion, each under a medical officer, were placed in the support lines, in rear of the flanks of the battalion.⁵⁵ Whenever possible, battalion aid stations were placed as conveniently as possible to natural routes of evacuation, for otherwise they did not function, as litter bearers went to more accessible locations. As the prime considerations for these stations were proximity to

the front and some shelter from hostile fire, they occupied any well-located spot affording some protection, such as a shell hole, cellar, culvert, quarry, dugout, or behind a ruined wall. Actually they were exposed to heavy fire from infantry, machine guns, and artillery. Occasionally they received direct hits by shells, as in the 90th Division, but sometimes then they escaped injury to patients or personnel.⁵² Sometimes, as in the 2d Division at Vierzy, in the Chateau-Thierry area,⁵⁶ and in the 3d Division during the Meuse-Argonne



FIG. 21.—First-aid station, 4th Division, Septsarges, France, September 27, 1918

operation,⁵⁸ two or more battalion aid stations—perhaps those of different regiments and, in the latter offensive, even those of neighboring divisions—consolidated. Such a course was rendered advisable at times by the proximity of the organizations which they served, and the paucity of available shelter and of evacuation routes. Furthermore, such consolidations gave opportunity for mutual exchanges of supplies, allowed the personnel to work in shifts instead of continuously, and facilitated ambulance evacuation by reducing the number of stations which the ambulance companies had to locate and clear. Battalion aid stations in open warfare were much more simple

than in trench warfare, for there were neither time, facilities, nor transportation for their elaborate development. Habitually, regimental Medical Department detachments were supplemented by details from the ambulance companies. To mention but two of many instances of this practice, the 2d Division in the Chateau-Thierry region assigned 160 ambulance company men to duty with the regiments,⁵⁹ and the 90th Division in the St. Mihiel operation thus assigned 80 men from 3 of its ambulance companies.⁶⁰ The manner of distributing these men varied considerably in the several divisions. Sometimes they were allocated by the regimental surgeon to the battalion aid stations needing them most, where they worked under the battalion surgeons.



FIG. 22.—First-aid station, 325th Infantry, near Fleville, Ardennes, France, October 12, 1918

Sometimes, though assigned to these stations, they remained under control of the officers of ambulance companies detailed with them. In many divisions the ambulance company litter bearers carried patients from the front lines to battalion aid stations as well as thence to the ambulance head. As described earlier, most divisions detailed men from the line companies to act as litter bearers. Bandsmen, when employed, performed similar duties, but, as previously stated, their service as litter bearers was soon discontinued. Prisoners also were used wherever most needed, until their employment near the front was prohibited, and thereafter they carried patients only when on their way back from the front.¹¹

In open warfare, provision in adequate quantity of even the most necessary supplies was an urgent and difficult problem for battalion aid stations. Frequently, stations could be supplied with only such matériel as enlisted men could bring upon their persons from the dressing station or ambulance head. For this purpose they used any available receptacle; wheeled litters if these were at hand. The battalion medical cart proved too heavy for its one animal, and it usually remained with the train. Whenever possible, supplies were sent up by ambulances, or, in case of need, by trucks of the sanitary train.¹¹ If these vehicles could not reach the battalion aid station they transferred their supplies to litter bearers at the ambulance head. The same replacement methods were used as in the trench warfare; that is, for each article sent back from the front and equivalent one was sent forward from the dressing station.¹¹ Supplies also were sent forward on requisition. If matériel needed by battalion aid stations was not on hand at the dressing station, the first ambulance going from it to the triage carried to the supply "dump" or unit there a request for the needed articles, and they were sent up by the supply officer by the next ambulance going forward.

Sometimes, after an offensive had begun, no attempt was made for an hour or two to bring in the wounded from the forward area to the aid stations, for the reason that attacking and support troops were under heavy direct fire from the enemy, and any attempt by a litter group to remove the wounded would have been folly. After this time had elapsed, however, enemy fire usually slackened or was directed against the troops as they advanced, and litter evacuation could be conducted with less danger.¹¹ Meantime, Medical Department personnel with the attacking troops dressed the wounded, applied splints and placed patients at any sheltered points accessible. The "first-aid packet" was generally used for bullet wounds, and this or the "front packet," as required, for shell wounds. Fractures were immobilized usually by the Thomas splint. As the troops advanced, the battalion aid station moved forward to successive locations.¹¹ Thus in the 78th Division such a station was scarcely established before its personnel again advanced to open a new one. In such cases "collecting points," which sometimes corresponded to a centrally placed battalion aid station, were often established, where patients were collected to facilitate evacuation by ambulance company personnel.¹¹

In open warfare service at battalion aid stations was similar to that given at such stations in the trenches so far as facilities permitted. Wounds were redressed and splints adjusted, if necessary; hemorrhage was checked and shock controlled, as well as possible. Gassed patients were given as much relief as practicable. Usually, antitetanic serum was administered here. The 3d Division stressed this point.¹⁷ Because of road congestion and heavy enemy fire, patients sometimes had to be kept in a battalion station until nightfall. During the Meuse-Argonne operation it was frequently remarked in the hospitals that patients with comparatively slight wounds were gravely shocked—a condition attributed to cold, exposure to wet, and to exhaustion. Even if supplies were brought forward in considerable quantities, little could be done to combat shock at the battalion stations other than to rectify splinting, to apply blankets properly, and to administer morphine.¹¹ Therefore, the

wounded were removed systematically as soon as diminished intensity of enemy fire permitted this procedure. Yet the retention of shock patients until they rallied, instead of removing them immediately, was advocated in some divisions, notably the 3d Division,¹⁷ but, as has just been stated, as a general rule, patients were evacuated as promptly as possible.

As soon as they could be removed, patients who were unable to walk were taken from the battalion aid station either by litter bearers or—oftener after nightfall—by ambulances coming as far forward as the station. This was done despite the fact that this plan caused numerous casualties and the loss of much-needed cars. Their coming to these stations was considered expedient because evacuation was thereby expedited.

The following vivid description of front line and battalion service is taken from the report of the Medical Department activities of the 1st Division in the offensive toward Soissons:⁶¹

Battalion surgeons and enlisted personnel accompanied their units and established aid stations and collecting points as close to the firing line as the terrain would permit. They moved forward almost hourly during the five days of battle. While advantage was always taken of protected points, the collecting stations during the greater part of the advance were in hastily dug holes, in open fields, shell holes, old gun emplacements, etc.; at other times under shelter of hills, in cellars, or behind ruins of buildings or low embankments along the sides of the roads. After the first two days in this offensive there was a great shortage of litters, and other supplies proved insufficient. These had been carried by corps men in pouches, sacks, or "feed bags." German equipment was hunted for on the field. Litter bearers were constantly in the open, under machine-gun and shell fire, and a number of them were killed. German prisoners were used as litter bearers, and some wounded were removed (contrary to existing orders) by men of the line. First-aid dressings and splints were applied at the first point behind the line when there was comparative protection. Litters were often improvised, that extemporized from the blouse, with rifles for side bars, being the most common. Often, because of heavy fire, the wounded were kept in shell holes until nightfall. As no hot refreshment was available in advance of the dressing station, the wounded reached that point in much worse condition than would otherwise have been the case. It was impossible for the rolling kitchens or water carts to get up close to the line, and the dressing stations therefore dealt with wounded whose vitality had been lowered by lack of food and water.

In the early part of the St. Mihiel operation the 5th Division transported by litter such of its wounded as were unable to walk, but the supply of litters was insufficient to meet the need, as was also the number of bearers. This condition was attributed to the irresponsibility of bearers from the line, for though provision had been made for their detail, these bearers had not then been organized into squads under noncommissioned officers. In this extremity additional litters were brought up, and prisoners also were used as bearers.⁶²

Because it was impracticable to use mounted messengers or to have direct telephonic communication from the more advanced formations, maintenance of contact, or liaison, between the battalion aid stations and the dressing station was much more difficult in open than in trench warfare. Enemy fire, shell holes, dense brush or forest, barbed-wire entanglements, abandoned trenches, movement of stations, ignorance of the newly occupied terrain, and—during the time when the wounded could be moved with the greatest safety—darkness, all conspired to aggravate the difficulties of maintaining contact.

The report of the Medical Department activities of the 35th Division records that line officers supplied medical officers with insufficient information concerning forward movements and that battalion and ambulance company personnel had inadequate knowledge of each other's locations.⁶³ Usually, contact in the several divisions was maintained by two runners detailed from the ambulance companies to each battalion aid station, and if these failed, returning litter bearers were interrogated. In the 90th Division five men were assigned to each brigade for liaison service.⁶⁴ In the 5th Division contact was maintained between regimental and battalion stations—which were located near their respective control posts—by runners from the regimental medical personnel or from the regimental and battalion message centers and by telephone between them.⁶⁵ Battalion medical officers usually maintained direct contact, through runners or litter bearers, with the ambulance company and, with line officers, before each engagement made a reconnaissance of the terrain, with a view of determining the location of future stations.¹¹ The regimental surgeon was required to keep himself informed at all times of the location of his aid stations and of dressing stations and to keep subordinates acquainted with the exact location of dressing stations, relaying his information in both directions. He required that whenever one of the battalion stations moved he be notified and that whenever one of these required an ambulance he be given clear directions concerning the station's position. In the Meuse-Argonne operation, however, battalion aid stations in some regiments of this division maintained direct contact with ambulance companies without the regimental surgeon acting as an intermediary. This was the habitual practice in other divisions.¹¹

In the 2d Division the divisional litter bearer officer (so detailed) and his subordinates knew where the battalion aid station would be located at the jump-off, and had determined, after reconnaissance with line officers, where they would be located if the attack progressed as anticipated.⁶⁶ He determined, likewise, the present and future sites of the dressing stations, with the roads and paths leading to them from battalion aid stations. Before the attack, litter squads were placed well forward toward the stations they would be required to evacuate. In these duties he was assisted by two officers from each ambulance company, both before the attack and during its progress, who commanded the litter bearers details and gave them full information concerning the present and future locations of the formations with which they were concerned. He continued to perform the duties of reconnaissance and supervision throughout the attack.⁶⁶

The two outstanding lessons developed by experience in the 78th Division were recorded as follows:⁶⁷

Arrangements must be made in advance and personnel trained to maintain an absolute chain of liaison, no matter what troop movements may occur in a sector, say, 10 km. (6 miles) in width and 20 km. (12 miles) in depth, and that in preparation for an expected military operation of whatever nature it is extremely important to prescribe, not the actual location of dressing stations and field hospitals, but the road or roads along which Medical Department communications, including supply and evacuation and liaison, will be conducted.

Difficulties of liaison arose through the following causes: (1) Difficulties of terrain. (2) Lack of training of medical personnel. (3) Failure of front line personnel to send back to the sanitary train or division surgeon information concerning location. (4) Interchange of battalions between front line and brigade or division reserve. Since cipher telephone calls followed organizations to their new locations, it was only by obtaining from G-3 the names of organizations occupying certain aid posts that the reserve station could communicate with these aid posts except through its own evacuation service.⁶⁷

Eventually, in many divisions, responsibility for maintenance of contact was placed on ambulance company commanders, who effected it in front of the dressing station, as described above, by assigning runners to aid stations, and to the rear by ambulances and motor cycles.

THE REGIMENTAL AID STATION

Few divisional histories make mention of the regimental aid station toward the end of the war, for it was generally discontinued then for its original purpose; but some divisions continued so to use it. For example, one regiment of the 5th Division in the Meuse-Argonne operation established both regimental collecting stations and regimental aid stations, the former in advance of the latter.⁶⁸ Six bearers from each line company carried patients to these points from the battalion stations. In the 3d Division, during the same action, the 7th Infantry at one time evacuated through a regimental aid station, while other troops evacuated direct from the battalion aid station to the dressing station.⁶⁹ Liaison between the regimental aid station and the dressing station was maintained by runners, by litter bearers, and by telephone from the advance post control. Whenever possible, collecting points for regiments were on roads.

Control of the walking wounded presented a grave problem. The need of military police to direct the movements of these was remarked by some of the divisions in the Meuse-Argonne, especially when the country was open and rolling and hills afforded some shelter. Men seeking cover or escape from enemy fire would leave the roads and follow hill contours or would attempt short cuts, with the result that some wandered until exhausted. The situation was met to a degree by sending wounded men to the rear in groups under escort.¹¹

MEDICAL SERVICE OF ARTILLERY AND MACHINE-GUN COMPANIES

Medical service of batteries and machine-gun companies was similar to that of the Infantry. Two enlisted men of the Medical Department were attached to each battery or company, and sometimes utilized selected shelter as an aid station. For example, the medical detachment with the 13th Machine Gun Battalion of the 5th Division occupied a dugout 100 yards in the rear of its position at the commencement of the St. Mihiel operation.⁷⁰ In the Meuse-Argonne, when this battalion was split, one company going to each flank of an Infantry battalion, its aid station was established in a shell hole midway between and behind them.⁷⁰ In the 19th Field Artillery the regimental and battalion aid stations were located near the respective posts of command.⁷¹

THE SANITARY TRAIN

The methods of the sanitary train in open warfare also differed from those in trench warfare. Difficulties were augmented greatly by the prolonged increase in enemy fire, road congestion, movement of troops and of Medical Department formations serving them, limited facilities for supply, increased numbers of wounded, greater need for Medical Department replacements, inexperience of these replacements on arrival, and by physical exhaustion caused by long-continued hard labor and by exposure. During the Meuse-Argonne operation the strain on the Medical Department was further intensified by an epidemic of influenza, which nearly decimated its effectives. These subjects will be discussed in more detail in appropriate chapters.

AMBULANCE COMPANY EVACUATION

The method for employing ambulance companies in trench warfare was, in general, followed when our troops assumed the offensive in open warfare, but there were some differences in detail. Sometimes two or more ambulance companies were consolidated, as in the 2d Division in the offensive against Soissons.⁷² Much larger details of litter bearers were commonly assigned with regimental detachments; and at times, when regimental personnel could not cover the field, every man who could be spared from the ambulance companies was thus assigned. Usually, the ambulance personnel with regiments was drawn from several companies; much less frequently one company was so assigned almost in its entirety, or more than one company might be so used. At times, as in trench warfare, and as noted above, the ambulance company bearers serving with regiments were placed under the orders of the battalion surgeons concerned, but sometimes they operated under their own officers. Both practices were followed in some divisions (as in the 3d)⁷³ at different times, the latter method coming to be more highly regarded. The 2d Division reported that the system of having patients brought to aid stations and collecting points by litter bearers with regiments—including details from line and from ambulance companies if these were needed—and of having evacuations back of these effected as usual by the litter-bearer sections of the ambulance companies proved highly satisfactory.⁷⁴

As in positional warfare, in all divisions the litter-bearer sections of the ambulance company cleared the battalion aid stations, if these were not accessible to ambulances, and frequently established collecting points at convenient places, preferably convenient to vehicles. Here patients from battalion stations were gathered, and thence they could be carried by litter to the dressing station or could be reached from there by ambulances. The 5th Division, for example, established eight such collecting points during the Meuse-Argonne.⁷⁵ Just as in trench warfare, the litter-bearer sections established relay points if necessary, but there was a progressive tendency to advance the ambulances, even at considerable risk, and collecting points were, in fact, relay points as well, if litter-bearer service back of them was necessary. Habitually they were accessible to ambulances if battalion aid stations were not. Often a subsidiary or advanced dressing station was established and

patients were brought to it by litter. If this advanced station was not accessible to ambulances by daylight—as was often the case—patients had to be carried by litter farther back to the main dressing station, the advanced station then being used as an elaborated relay point.¹¹

In the 2d Division during the St. Mihiel operation, as battalion aid personnel moved forward to open new stations, detachments of the Medical Department with support and reserve troops successively took over care of the casualties in stations left behind, until in turn they were taken over and evacuated by an ambulance company.⁷⁴ Later, the ambulance company took over these unfortunates direct from medical personnel in the advance lines.

After the delay in evacuation experienced at Soissons, this division designated a divisional litter-bearer officer and two commissioned assistants from each ambulance company. Under the general direction of the litter-bearer officer, the noncommissioned assistants had command of the litter-bearer squads used to clear battalion aid stations. When the battalion surgeons advanced they were accompanied by runners who, for the ambulance companies, maintained liaison between the new aid station and the former one, so that after clearing the one farther to the rear the ambulance company could locate with certainty the one farther advanced. As a result of this arrangement the battalion surgeon and his detachment kept near the troops they served, and battalion litter bearers, evacuating patients from the place where they fell, had to go no farther back than the battalion aid station last established. When the ambulance company took over a station the battalion surgeon had to give it no further thought.⁷⁵ But until that time, if he and his personnel moved farther forward, it was the usual practice to leave one or two attendants until the station was taken over by a detachment with support troops, or until the ambulance company came up. The method employed in the 2d Division at Mont Blanc is described as follows:⁷⁷

The enlisted men of the Medical Department with the companies followed the attack, dressing the wounded, who were carried back to battalion aid stations by company litter bearers (12 men from each infantry and machine-gun company) as provided by divisional order. * * * As battalion aid stations advanced, the old stations were taken over and cleared by ambulance company litter bearers under their litter-bearer officers, who maintained liaison with advancing battalion aid stations. The division litter-bearer officer, meanwhile, was everywhere, seeing that the work of litter bearers was coordinated and that ambulance posts were kept well advanced. With two Army ambulance sections operating Ford cars and G. M. C. ambulances assisting when needed, the wounded were rapidly removed from the sector and congestion rarely occurred.

In general, ambulances were operated under the system developed during trench warfare; that is, with a regulating station, ambulance posts, an ambulance head, service by circuits, the light Ford cars operating in advance of the dressing stations, the heavier G. M. C. or other cars in the rear of it. As in trench warfare, usually the ambulance companies on active duty rotated by roster, in order that one or more might repair cars while resting; but in periods of stress this arrangement was not feasible. There were so many differences in the details of applying the ambulance company system that it is considered advisable merely to mention here the more usual, typical practices, reserving more lengthy discussion for appropriate chapters.

One of the most conspicuous differences between ambulance service in trench and in open warfare was that, in open warfare, especially during the Meuse-Argonne operation, animal-drawn ambulances proved of great value and were much more frequently employed. This was due chiefly to the fact that they could go over routes impassable to motor vehicles, and often, by leaving the road, could pass obstructions which blocked other traffic.

In narrow sectors it was a common practice during the Meuse-Argonne operation for a division to operate but one ambulance head, served by several companies through one regulating station. The 90th Division reported that in that engagement its ambulances often reached battalion aid stations 300 yards from the line, but that at first roads were in such frightful condition and so crowded that not more than two round trips could be made in 24 hours.⁷⁸ In other divisions in the early part of this operation one round trip sometimes required as long as this.

A regulating station often was operated in conjunction with the dressing station, and ambulances were parked near it.⁷⁹ Under such circumstances the directors of ambulance companies worked in conjunction. Here, the wounded were not out of danger from shells and gas after being placed in ambulances, for roads and approaches to dressing stations which occupied sites known by the enemy to afford some shelter were often shelled and bombed.

Ambulances were sent up regularly after nightfall or on demand of the battalion surgeons, as in the 5th Division,⁸⁰ to battalion aid stations, if the military situation permitted. The 2d and 32d Divisions, like practically all others, increased their evacuation resources, in times of stress, by using the trucks of the sanitary train and any other trucks obtainable.⁸¹ In the 32d Division the sanitary trucks carried six litters lengthwise on the bottom of each truck and six crosswise on the sideboards, lashed in place by wires engaging the hooks provided for the cover fastening. Sitting cases were removed in groups of 24.⁸¹ On their return trips these trucks brought up supplies. They were used especially to clear field hospitals, but if need arose they also cleared dressing stations. Supply and ammunition trucks returning empty were also used to carry the wounded, for without exception the ambulances available in large engagements during open warfare proved utterly inadequate. One result of this was the increased difficulty in renewing medical supplies at forward points, for trucks returned to the front filled with their normal loads, and the ambulances moving forward did not have capacity to carry matériel sufficient to replace fully all supplies that had been sent back with patients.⁸² Trucks of the divisional sanitary trains relieved this condition, but later, in many divisions they were pooled with those of other trains, after which any trucks obtainable were utilized for wounded. This pooling of sanitary train trucks with others interfered with the availability of these vehicles to the medical authorities, but apparently was necessitated by military exigencies.

The most serious difficulty experienced in ambulance company service in open warfare in the early part of the war was the necessity for sending ambulances to points far in the rear. During the early activities along the Marne, though additional evacuation ambulance companies were provided

to evacuate divisional hospitals, ambulances proved inadequate at times: for example, when they had to carry patients 60 km. (37.2 miles) or more to evacuation hospitals. The 2d Division, during its action along the Marne, had a total of 200 serviceable ambulances, including those of its own sanitary train and those assigned to it.⁵¹ Before the St. Mihiel operation arrangements were made to avoid the necessity for these long trips by divisional ambulances by providing ambulance companies operated by the corps and army to clear the field hospitals.⁵³

The supplies of ambulances were increased as the war progressed. In the 42d Division the following articles were added to their regulation equipment:⁵⁴ Ammonia, ampules, boxes, 10; catheters, 4; coats, gas, 2; masks, M2, French, 4; mittens, gas, 2; oxygen tanks, small, and connections, 4.

THE DRESSING STATION

As a rule, two or three dressing stations to a division were established according to the width of its sector, availability of roads, and military activity. It was a common practice in some sectors to utilize two ambulance companies in the service of one main dressing station, while a third operated an advance station and the fourth was held in reserve except during periods of especial stress, when all—particularly the litter bearers—were active; but there were many departures from this method, even in the same division, at different times. Tactical needs determined disposition. Thus, in the 3d Division, three ambulance companies during the Meuse-Argonne operation served a main dressing station at Montfaucon, the fourth being in reserve, while at other times individual ambulance companies operated their own stations.⁵⁵ The 90th Division, which at one time utilized two companies at the main dressing station, a third company at an advance station, and held the fourth in reserve, on another occasion, when two roads were available, operated parallel evacuation routes, assigning one company to each station, while two companies were in reserve.⁵⁶ Under other circumstances it used a third disposition, one company operating an advance station, another a main station in the rear of it, the third operating a main station for a different part of the line, while the fourth company was in reserve. The changes of tactical arrangements in these divisions were typical of all the divisions. The 77th Division habitually kept two ambulance companies in action and two in reserve, the personnel of one of the latter companies assisting one of the active companies if needed.⁵⁷

Only one main dressing station was established by a division in a narrow sector, and if communication to this point was delayed or obstructed—as it usually was during the Meuse-Argonne operation—an advance station was operated. Under such circumstances two ambulance companies often were assigned to the main station and one to that in advance, the fourth being held in reserve to leapfrog when needed; or two companies operated both the main and advance stations and two were held in reserve. When the advance was rapid, one company was usually kept at rest behind another, the rear one leapfrogging when another station was needed farther forward.⁵⁴ Evacuation serv-

ice was very exhausting; it was carried on night and day, and difficulties were aggravated by the loss of personnel and of vehicles. Dressing stations were located as near the front as possible, the 80th Division reporting that those which it established were often within 0.3 km. ($\frac{1}{2}$ mile) of the front line and were never more than 0.6 km. (1 mile from it).⁸⁸ In the St. Mihiel operations the 5th Division established its dressing stations approximately in the line of regimental stations but more centrally located and often somewhat in the rear of them.⁸⁹ The 1st Division, at Cantigny, placed its station in advance of the command post of the division surgeon;⁹⁰ and the 2d Division, at Vaux, on July 1, 1918, sent up a dressing station to reinforce the regimental aid station of the 9th Infantry.⁹⁰ This formation also established a Medical Department "dump" still farther forward, at a point accessible to ambulances. Dressing stations were often established in or near villages, if their location was suitable from a military standpoint, because these villages were marked on maps and were on roads and thus more easily accessible. Such sites, however, were shelled frequently; oftener, perhaps, than other locations would have been.

Sometimes, two divisions located their stations in the same village; for example, at Montfaucon during the Meuse-Argonne operation. The site was often at a place affording some shelter, and a tendency developed to locate stations at points which could be used later for triage purposes. The method of advancing various medical units is illustrated by the following extract from the report of the division surgeon, 2d Division:⁹⁰

Following the attack on Blanc Mont, an ambulance dressing station personnel furnished by the 1st Ambulance Company was established at Somme-Py on the afternoon of October 3, the 16th Ambulance Company dressing station taking its stand at Souain. On the 4th the ambulance head had advanced to Somme-Py and the 15th Ambulance Company dressing station leapfrogged to a point 2 km. north of Somme-Py, while the triage—1st Field Hospital—had set up at Souain. On the 5th the 23d Ambulance dressing station leapfrogged to a position near Medeah Ferme and the 1st Field Hospital advanced to Somme-Py, as did the surgical unit—15th and 23d Field Hospitals.

Divisions frequently established an advanced dressing station if the main dressing station was at the ambulance head; but, as noted above, whenever possible, ambulances brought patients to the latter station direct from battalion posts and collecting points. Either the advanced station, if established, or the main dressing station, took over the site of what would have been a regimental station formerly and served the troops as the regimental station had been designed to do originally. When information was received that the battalion aid station had advanced, one or two officers and a small detachment of enlisted men went forward with matériel carried perhaps by ambulances, and established a new station. In the 81st Division, if the advance dressing station moved, a man was left posted until the director of ambulance companies had received report of the new location.⁹¹ All divisions found that these stations must be centrally located and on natural evacuation routes.

The stations utilized tentage, but frequently their tentage afforded very limited shelter, it sometimes being no more than a tent fly. Toward the end of the Meuse-Argonne operation each division in the Third Corps was or-

dered to establish a field hospital near its main dressing station, where patients often collected in large numbers before they could be removed.⁹²

Sometimes, the dressing station operated the triage, methods being much the same in this respect as those previously described under trench warfare. In order to relieve the dressing station, the 89th Division⁹³ and a few other divisions maintained a station for ambulant patients—the slightly wounded, slightly ill, or fatigued—but this formation was very unusual.

Dressing station equipment was often limited in variety, consisting chiefly of dressings, splints, litters, blankets, antitetanic serum, a few drugs and instruments, and antigas supplies. An important factor in the equipment of a dressing station was a kitchen with ample cooking facilities.¹¹

In open warfare, the service of dressing stations was similar to that when troops were in the trenches. The personnel often worked in shifts, except during periods of stress, when all were constantly on duty. At such times, records were fragmentary and incomplete. Redressing of wounds at these times was reduced to a minimum and was confined chiefly to wounds with hemorrhage. Dressing stations in narrow sectors frequently received patients from neighboring divisions. The majority of casualties usually occurred close together, as to both time and location, and stations would be congested for a period followed by an interval of comparative calm. It was a general practice to give morphine to all the seriously wounded.¹¹

The main dressing station operated a small medical supply dump, which was replenished constantly, as already described under trench warfare, by ambulances returning from the rear and by trucks. This was a highly important feature in the service of these stations, and their maintenance of adequate supplies in the Meuse-Argonne operation required constant effort because of road congestion and limited transportation.¹¹

Another very important service here was that of supplying hot food. The 5th Division reported that from one of its dressing stations more than 3,000 men were fed in 48 hours.⁹⁴ Many of those seeking the station required no other care, and some, after receiving food, returned to their companies of their own volition.

Treatment of patients before they reached the hospital was generally reported as good. Thus, the 90th Division reported that 99 per cent of cases reaching hospital had been well splinted and dressed.⁹⁵ The 5th Division reported that less than 10 per cent required antitetanic serum.⁹⁶ The same division reported that fracture cases invariably reached field hospitals in good condition, owing to the very careful and judicious application of the Thomas splint—which proved to be a great boon during the war.⁹⁶ The benefits of special training, given regimental medical personnel in the application of the Thomas splint, were shown by the good condition in which patients were received at hospitals.

The 2d Division reported that the average time consumed in transferring the wounded to field hospitals was a little more than one hour in the St. Mihiel operation, some nontransportable patients reaching the operating table at Thiaucourt within 20 minutes after being wounded.⁹⁷ At Soissons,

however, because of road conditions, the ambulances of this division frequently needed from seven to eight hours to make a trip. The 5th Division, in the St. Mihiel operation, had its patients in hospital in from 4 to 6 hours, and in the Meuse-Argonne in from 10 to 12 hours, except in some few instances where 24 hours elapsed after individual patients had been gassed or wounded.⁹⁸

FIELD HOSPITALS

Usually, in open warfare, field hospitals were located from 4.8 to 9.6 km. (3 to 6 miles) from the front, the site often being determined to a large extent by conjunction of the roads of the sector served. As field hospitals in open warfare habitually used tentage, the location of available buildings became a matter of minor importance. In many divisions field hospitals were so near the front that they were hit by enemy shells; for example, Field Hospital No. 360, 90th Division, on October 25, 1918.⁹⁹ Field hospitals of the 5th Division were habitually at some distance from towns or crossroads, but placed on some highway from front to rear.¹⁰⁰

During the second phase of the Meuse-Argonne operation the Third Corps, which had a rather narrow front and good road facilities, grouped the field hospitals of its three component divisions at Bethincourt, designated three hospitals—one from each division in line—to perform triage service, and operated in effect a corps triage, though divisions retained control over their respective field hospitals composing it, each division thus having a field hospital to receive, classify, and record its own casualties.¹⁰¹ One division then established a hospital for all nontransportable wounded; another, one for all gassed patients; and third one for overflow; each of the three last-named units receiving patients from all three divisions composing the corps front. The third field hospital of each division remained outside the battle area to receive sick daily, and served as a relay station, while the fourth was held in reserve to leapfrog if necessary.

Mobility of field hospitals depended largely upon the expedition with which they were cleared by corps ambulance companies. At times, transportation for this purpose could not be furnished in sufficient amount. Although all divisional Medical Department units suffered from this lack, the field hospitals were most gravely affected by it.¹⁰² At times it was impossible, because of military exigencies, for field hospitals to keep their trucks even after they had received them. The animal-drawn field hospital, though usually a rear formation, could sometimes advance over ground impassable by motor vehicles, and its mobility under such circumstances proved of definite assistance in solving the Medical Department problems of the division.

A very important service of field hospitals was that of supplying hot food to all who needed it, whether patients or not, thus alleviating fatigue and maintaining morale, as did the same service at the dressing stations.

No orders prescribing the use or distribution of divisional field hospitals were issued by authorities higher than the corps. Much was left to local initiative. In general terms—to which many exceptions may be found—in

active offense the field hospitals were used as follows: (1) Triage and non-transportable wounded; (2) slightly wounded; (3) gassed and sick; (4) reserve.

TRIAGE

For convenience the triage will be discussed at this point in connection with field hospitals, with which, usually, it was associated both in trench and in open warfare.

The triage, or sorting station, whence patients were distributed to appropriate hospitals, was a new formation in the American Army, the idea having been borrowed from our Allies after the United States entered the war,¹⁰³ and it was first used, with some modifications, in the 1st Division.¹⁰⁴ Though operated in all divisions in trench as well as in open warfare, no orders from higher authority required it or standardized it in personnel, organization, equipment, or operation, each division following its own methods except when a corps surgeon prescribed for divisions within his jurisdiction. Several divisions operated the triage at the dressing station, but usually it was a department of a field hospital, or, less frequently, was attached to a field hospital. Between the several divisions there was some difference in what was understood by the term "triage." Not infrequently it meant only the sorting station which either belonged to a hospital or was attached to it, and, rarely, it was made to include the neighboring hospitals to which patients were distributed. Sometimes, as already indicated, it was a main dressing station more elaborately developed than these formations usually were, from which sorted patients were distributed direct to appropriate hospitals.

The manner in which the triage was operated at a dressing station has already been described. When operated in conjunction with a field hospital it functioned habitually with the one farthest forward. In some divisions the triage hospital received all nontransportable patients whether sick, wounded, or gassed; in others it received the seriously wounded only; in yet others, as in the 36th Division, this hospital retained no patients, but was used solely as a distributing agency.¹⁰⁵ In trench warfare a designated hospital usually performed triage service as long as a division occupied a given sector, a change being made only when the division was moved to another part of the line, when sometimes another field hospital was assigned to triage duty; in open warfare, on the contrary, field hospitals often alternated in triage service.

The personnel conducting a triage consisted in part of the divisional consultants; i. e., the divisional chief of surgery or his representative, orthopedist, psychiatrist, urologist, tuberculosis expert, and gas-treatment officer.¹⁰³ Often the chief of surgery was replaced here by a carefully selected officer chosen for his surgical judgment rather than for his operating ability. Members of the professional group often were supplemented by other officers and by enlisted men permanently, or, more commonly, temporarily assigned to triage duty. Triage officers were required to make quick but unhurried diagnoses and to estimate correctly the patient's needs in their relationship to available facilities for treatment. To the finest discrimination and most unerring

judgment had to be superadded a thorough knowledge of medicine and surgery, and of human nature. The task became especially difficult when most important; that is to say, when hospitals were filling and evacuation facilities were limited. Then, too, often at this time the diagnosticians were worn out by the long-continued admission of many patients. In the 32d Division, a permanent triage group was organized consisting of the specialists above mentioned and, in addition, of officers drawn from all the field hospitals. This group was independent, performing triage and consultant duty only.¹⁰⁶ In the 90th Division one ambulance company in conjunction with a field hospital established the divisional triage.¹⁰⁷ The triage hospital of this division consisted of four sections, the triage proper, gas, nontransportable, and psychopathic. In the Meuse-Argonne operation, unlike its practice at St. Mihiel, the triage of the 90th Division retained no gas patients unless it was imperative to do so to save life, evacuating all others to appropriate units, and operating day and night shifts.¹⁰⁸

In the 77th Division, two triage units were organized by drawing on the personnel of two field hospitals, and surgical, shock, gas, and medical teams were organized.¹⁰⁹ Enlisted personnel, carefully selected, were assigned in the proportion of two to each officer, the group remaining a permanent team. Other qualified enlisted men were designated for special duties, such as the administration of morphine and serum, and the application of bandages and splints. Permanent details were assigned for litter bearing, clerical work, policing, and the serving of food. The detachment on duty in the operating room was composed of men who in civil life had been hospital orderlies. The triage equipment was selected from the two field hospitals concerned. The Medical Department supply table was ignored for this purpose, and much of the hospital equipment was salvaged, being replaced by other articles which were thought to be more useful; for example, additional blankets and litters.¹¹⁰

The triage of the 80th Division consisted of two field hospitals, usually combined, and included a receiving ward and wards for slightly wounded, seriously wounded, shocked, gassed, sick, transportable patients, an operating room, and a mortuary.¹¹¹

At the triage of the 5th Division, patients were redressed, if necessary, and emergency treatment, such as for shock or gassing, was given.¹⁰⁰ In the 2d Division the triage carried bathtubs and other facilities for gas treatment.¹¹²

Though sorting of patients was practiced in every stage of the evacuation service, each division habitually operated but one official triage. In the St. Mihiel operation the 82d Division had a triage on each side of the Moselle River,¹¹³ and in the second phase of the Meuse-Argonne the 33d Division¹¹⁴ had two, one at Glorieux and the other at Bethincourt. The 78th Division, in the second phase of the Meuse-Argonne operation, attacked on a rather wide front, through heavy brush and timber, traversed by so few roads and trails that the wounded could not be collected at any one point reasonably near the front. For this reason it organized two triages from its ambulance companies and located one with two hospitals behind either flank.¹¹⁵ There were several

other instances in which two triages were operated by divisions, but the foregoing illustrates the conditions which usually necessitated this—a long front, or such a one that evacuation from its flanks to a central point was difficult because of enemy fire, location of roads, ruggedness of terrain, or bisection by a river.

The following quotation illustrates certain phases of triage service:¹¹⁶

In the Meuse-Argonne offensive, the triage hospital was opened about 6 km. behind the line, and with it were the three other hospitals and the medical supply depot. Two of the hospitals cared for the sick and wounded and one operated as a gas hospital. The fourth hospital was held in reserve. This was found to be a very satisfactory arrangement on that particular front, since it gave wide expansion under canvas, with the necessary personnel to care adequately for all cases received. Also, it allowed the three hospitals to open immediately all their wards, while the personnel of the reserve hospital could do the necessary road building and police work. Triage of cases was conducted by Field Hospital No. 27, which cared also for the seriously wounded, and the direction of the whole field hospital section was under the supervision of the director of field hospitals.

The professional work was about the same as on the Marne front except that fewer operations were performed. Patients as a whole arrived in better condition, but there was a large number of shock cases, the weather being cold and rainy. Many cases of exhaustion were received, due to the exposure and hardships of long-continued service in the front line.

Usually simple records were made of all patients at the triage. Cases were rapidly classified, hemorrhage was controlled, dressings were readjusted if necessary, shock was treated, antitetanic serum was injected if it had not been administered previously, hot food was given, and emergency operations were performed on a few nontransportable patients by the hospital staff or by operating units assigned by the chief surgeon of the army.

If a mobile surgical unit was assigned to a division it was operated in conjunction with the field hospital for nontransportable patients.¹⁰² Often the personnel of a field hospital was increased by surgical teams; for example, in the Chateau-Thierry sector the 2d Division received a number of surgical teams, including 18 nurses, and the personnel of an overworked field hospital was often reinforced by details from others in reserve.¹¹⁷ Thus, on June 6, 1918, the 2d Division ordered half the personnel of Field Hospital No. 23 to Bezu to assist Field Hospital No. 1.

The triage was usually the first hospital reached by patients, and others were grouped as near it as was practicable, the rearmost one being held in reserve. (This arrangement of hospitals was called the "diamond formation" in the 32d Division.)⁸¹ As troops advanced, the rear hospital moved forward past the others and established the triage, the other units following it as soon as practicable and the former triage then going into reserve. There were many departures in details from this practice. Sometimes, as in the 90th Division, half the triage group accompanied the newly-advanced forward hospital while the remainder, after the new one had opened, continued to operate the former triage.¹¹⁸ Sometimes two full triage groups were organized

which leapfrogged each other, as in the 77th Division.¹¹⁰ In the 32d Division the rear surgical hospital evacuated its patients and moved forward to take over triage work, and the gas hospital moved up beside the advanced surgical hospital.⁸¹

There were further departures from these uses of field hospitals, of which only a few will be mentioned here. Though generally following the foregoing disposition, the 1st Division had at times only two field hospitals open, keeping two in reserve.¹¹⁹ The 2d Division consolidated two hospitals into one establishment for the wounded, and sought to maintain its capacity at 250 beds.¹²⁰ In the St. Mihiel operation one hospital of the 78th Division received gassed patients, another the sick and slightly wounded, and a third field hospital cared for nontransportable patients, the fourth being held in reserve.¹²¹ The triage was operated by an ambulance company which called on a field hospital for additional personnel if needed.¹²² At one period the 36th Division operated one hospital as a triage, sending nontransportable patients to another, gassed patients to a third, and all others to evacuation hospitals.¹⁰⁵ In the Aisne-Marne operation the 42d Division set up one field hospital near the dressing station after its evacuation became difficult because of road congestion.¹²³

The following quotation, which covers the activities of the gas hospital of a division, is made from the report of the 3d Division: ¹²⁴

The gas hospital was fitted up with the following equipment: A large shower bath, a large supply of blankets, pajamas, bed sacks, and an extra number of ward tents in order to accommodate several hundred patients. In addition to the regular field-hospital equipment, the following were provided: Oxygen-inhalation sets, sodium bicarbonate 1 per cent solution, novocaine 1 per cent solution, albolene, camphorated oil in ampules, caffeine citrate in ampules, quarter-grain solution of morphine in ampules. This equipment and supplies were placed in each ward. Shower baths were provided, with a large supply of soap, towels, and sodium bicarbonate.

Patients were divided into three classes: (1) Those suffering from surface contact with mustard gas; (2) those intoxicated by the inhalation of noxious gases; (3) cases suffering from both these conditions. Those in the third class were numerous.

Patients were admitted through a receiving ward, where the diagnosis was verified and proper records were made. They were sent at once to the baths, where clothing was removed and each patient given a thorough bath, soap being used freely. Water used in the showers contained sodium bicarbonate (1 pound to 15 gallons). A fountain syringe was supplied with a 1 per cent solution of sodium bicarbonate, and the eyes, ears, nose, and throat of every patient were irrigated. All cases with blisters were then sent to the dispensary, where blisters were opened and the escaping fluid caught on gauze or cotton to prevent its coming in contact with the healthy skin. Gauze wet with a 1 per cent solution of sodium bicarbonate was applied to burned surfaces. Often, when a burn was slight, the sodium bicarbonate was dusted on. Patients were then sent to the wards, where they were given hot, stimulating drinks, such as coffee, cocoa, and broths, and morphine was administered as required. Most patients with mustard-gas burns had a complicating conjunctivitis, either slight or severe. Slight conjunctivitis was relieved by irrigating the eyes with sodium-bicarbonate solution, followed by a few drops of albolene. Severe conjunctivitis was treated with a 1 per cent solution of novocaine as often as required to relieve pain, and gauze wet with a 1 per cent solution of sodium bicarbonate was placed over the eyes. Patients gassed by inhalation were given a bath while recumbent. Severe cases were given a sponge bath in the wards as soon as their condition

permitted, but if the patient had difficulty in breathing he was at once given oxygen by inhalation for five minutes. Then followed an intermission of five minutes, and oxygen again applied. In five minutes' time there was usually a great improvement, and it was not often necessary to repeat its administration. Some patients who were unconscious were restored to consciousness by the first application; others remained unconscious for 30 minutes or longer. Hypodermic injections of camphorated oil, 1 c. c., or caffeine citrate, 2 grains were then given. The patient was kept warm by the use of blankets, and by heat, if necessary, and was given hot drinks as soon as he could take them. The majority of these patients soon recovered.

The rapidity with which patients were evacuated to and from field hospitals varied widely, being dependent chiefly upon the number and character of casualties and the intensity of enemy fire, which delayed the removal of the wounded in forward areas, road conditions back of the forward areas, and transportation.

In times of great stress, few patients were returned to duty from field hospitals, a fact largely due to the impossibility of temporary retention on account of the demand for beds, to the elimination at the dressing station of patients with trifling conditions, and to the disposition to give the benefit of any doubt to those whose need of further hospital care was questionable. It was then quite impossible to hold patients in the division, as beds had to be provided for later casualties. The 2d Division reported that the average time men were held in its field hospitals, if not evacuated, was four days, and that in very active warfare it evacuated most of them.¹²⁵ This was in striking contrast to the experience of this division in quiet sections, where 32.4 per cent of patients were returned to duty. In the 89th Division the average time patients spent in field hospitals was two hours, and the average time for nontransportable wounded was from five to eight days.¹²⁶

In the 26th Division the factors determining transportability of patients were regarded as intrinsic and extrinsic. The former comprised the patient's condition; the latter, bed space and other local factors, such as distance, time, means of evacuation, and road conditions.¹²⁷ Surgical conditions warranting evacuation, therefore, varied considerably at different times in this division, as in others. Specialists decided which patients should be transferred, while the director of field hospitals and the commanding officer of the triage kept them informed concerning extrinsic conditions governing selection of patients to be evacuated. In periods of stress, nontransportable patients in this division comprised only those with hemorrhage, aspirating chest wounds, severe abdominal wounds, partial traumatic amputations, and deep shock.

The activity of the field hospitals is indicated from the statistics quoted in other chapters concerning the casualties during different engagements. The celerity with which patients could be cared for by the divisional medical service is evidenced by the report of the 2d Division.¹²⁰ In that division, miscellaneous casualties were received, distributed, treated, and evacuated (if need be) at the rate of 120 per hour, and operated upon at the rate of 50 a day. The total number of patients operated upon in the field hospitals of the 2d Division during its entire experience in France was 1,665, 90 per cent of whom were nontransportable.¹²⁰

MEDICAL SUPPLY UNITS

Divisional medical supply units performed services similar to those in the 3d Division. Extracts from the report of the 3d Division (concerning the medical supply unit) read as follows:¹²⁸

When the Germans launched their great offensive along the Marne on the night of July 14-15, the medical supply unit, 3d Division, was called upon to furnish supplies in abundance. Owing to the vast number of wounded men pouring into aid stations it was necessary that surgeons have sufficient blankets and litters on which to lay them. Trucks were sent to advance medical supply depots and to American Red Cross warehouses, bringing back with them sufficient litters, blankets, shell-wound packets and splints to meet the demand. In the interim after the night of the attack until early August, when the division was relieved, no shortages of any kind arose.

While the division was at this front a great demand was made for Thomas traction arm and leg splints, Cabot splints, and a vast number of shell-wound packets. Snowshoe and wheel litters were used to great advantage, but when the division went into action in the Meuse-Argonne sector these items were rarely, if ever, called for.

The work of the medical supply unit at this latter station was to equip organizations after their long stay at the front, during which time many of them had lost a considerable portion of their equipment, some from enemy shell fire and others while moving. This reequipment was duly accomplished, and in anticipation of a situation similar to that existing on the Marne, the medical supply officer requested that four trucks be assigned. These were provided and requisition was made for a 10-days' supply of articles that would be in greatest demand while troops were in action.

During the Meuse-Argonne operation the medical supply officer made frequent trips to the regimental infirmaries of the various organizations, bringing with him an assortment of medical supplies which in his judgment might be needed.

October 2 found the unit proceeding overland to join the field-hospital section of the sanitary train, located near Very, arriving there that night. The depot was established in a ward tent and supplies were sent out the same night. Litters and blankets were most in demand, and in order to meet the situation, trucks were dispatched back to Souilly day and night during the remainder of the stay here.

A branch distributing station of the medical supply unit was established with the ambulance section of the sanitary train at Montfaucon. This proved a vantage point for the reason that it was the dispatch point for the ambulance service. The stock maintained at this point consisted chiefly of emergency dressings, medicines, and food supplies.

The medical supply unit functioned at all times near the triage hospital of the division, employing ambulances returning to aid stations to transport supplies to the medical officer at the point. Trucks belonging to the unit carried patients to evacuation hospitals in the rear, and brought up supplies on return trips.

In some divisions, the 78th, for instance, trucks of the medical supply unit carried matériel as far forward as the battalion aid stations.¹²⁹

DIVISION LABORATORIES

In the American Expeditionary Forces transportable laboratories were added to the sanitary trains of the divisions,¹³⁰ and proved of great value in the examination of water supplies and of pathological specimens and in determining wound bacteriology.¹³¹ The 1st Division found that the usefulness of the field laboratory was impaired by the limited amount of transportation at its disposal, and that it was of less value in active operations than when

the division occupied quiet or semipermanent sectors.¹³² Under the latter conditions it was a necessity to the sanitary inspector in his epidemiological work and to ward surgeons treating certain classes of the divisional sick.

BURIAL OF THE DEAD

The dead were buried in small plots selected with reference to prompt location. Very few, in the St. Mihiel or Meuse-Argonne operations, were buried at isolated places, and then only when the bodies were in such condition and at such a distance from the burial plot that local interment was necessary. The 3d Division reported, as did others, that the bodies of those who died on the field in No Man's Land remained unburied for many days.¹³³ Trench burial was employed near some hospitals, but only when facilities were not available for the preparation of individual graves. The work of preparing graves was very toilsome for men already well-nigh exhausted, and at times graves were dug by pioneer troops, and at other times the work was done by details from the line. Habitually the dead were buried in blankets, with an identification tag, and the grave was marked by a cross bearing the decedent's name and his official number inscribed upon it. If a second identification tag was available, this was affixed to the cross.

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CHAPTER V

EVACUATION HOSPITALS, MOBILE HOSPITALS, MOBILE SURGICAL UNITS, PROFESSIONAL TEAMS, CONVALESCENT DEPOTS, EVACUATION AMBULANCE COMPANIES, MOBILE LABORATORIES

EVACUATION HOSPITALS

NUMBER

A description of our evacuation hospital, as provided for at the beginning of the World War, will be found in the Manual for the Medical Department, which is quoted at length in the Appendix (p. 1026), so far as it pertains to the present subject. It will be noted that the prescribed plan was ordinarily to furnish two such hospitals, each accommodating 432 patients, for each division at the front, and that they were lines of communication units.¹

By 1916, the Medical Department had assembled equipment for 20 evacuation hospitals. This equipment was on hand at the beginning of the World War. No such organizations were actually in being in peace times, however, and the only evacuation hospital which we had ever organized, prior to the entry of the United States into the World War, was one which functioned at Galveston, Tex., during American activities near Vera Cruz, Mexico, in 1914.² The personnel for this evacuation hospital was assigned to it for the time being, assuming other duties as soon as the hospital was broken up.

When the strength of our division was increased in 1917 to some 28,000 men, the prescribed standard capacity of an evacuation hospital was increased to 1,000 beds, based on a recommendation of the chief surgeon, A. E. F.³ On occasions, however, even this number proved quite inadequate; that is to say, some such units cared for more than twice this number at one time; for example, Evacuation Hospital No. 1 at Sebastopol Barracks, in September, 1918, reached a bed capacity of 2,800.⁴

The great expansion of individual evacuation hospitals was necessitated primarily by the continuous shortage of these units in France, as they did not arrive overseas in the number provided by regulations and in the shipping schedule. As a matter of fact, until the armistice, never was there more than about 25 per cent of the authorized quota of evacuation hospitals available,⁵ for use as such in France. Prior to the armistice, only 37 evacuation hospitals actually reached France (7 arriving after the armistice) to serve the 42 divisions of the United States Army sent there. To this number should fairly be added Red Cross Hospital No. 114, which was taken over by the Army on November 1, 1918, as Evacuation Hospital No. 114.⁶

Five of the 30 evacuation hospitals which had reached France on or before November 11, 1918, arrived in November; two others had been previously assigned to duty in the Services of Supply (Allerey and Mesves) and two in the Joinville concentration area. Of the remaining 26, 4 (Nos. 18, 20, 22, and 23) were broken up temporarily, though part of No. 18 continued to function as a unit.⁶ Twenty-two evacuation hospitals, therefore, in the zone of the armies served the 29 divisions which took part in actual combat.

Most of the evacuation hospitals, which served other than in the zone of the armies, operated as base hospitals in the base or intermediate sections.⁷ As noted above, several were broken up, their personnel being assigned to other units. Other hospitals of this type, while retaining their skeletonized organization, were depleted by the assignment to other organizations of a large part of their personnel as operating teams and the like. It should be remembered that, throughout the war, these teams were drawn not only from base hospitals in rear areas but also from evacuation hospitals in quiet sectors to be assigned to temporary duty with other hospitals most active at the time.⁷

It was only dire and immediate necessity in other directions which forced diverting these evacuation hospitals from their proper purpose. On the other hand, so desperate were the shifts required to meet the needs of the evacuation hospital service that units not originally intended for this purpose were so used. Twelve mobile hospitals were provided by resort for personnel to all possible formations, including Red Cross Base Hospitals Nos. 110 and 114.⁸ In the St. Mihiel operation Base Hospitals No. 45 and No. 51, in the Justice Groupe at Toul, though under control of the chief surgeon, S. O. S., operated as part of an evacuation center virtually controlled by the army surgeon.⁹ With them, in addition to Evacuation Hospitals Nos. 3 and 14, were Red Cross Military Hospital No. 114, a neurologic unit from Base Hospital No. 117, a convalescent unit, and a hospital for gassed cases, the last staffed from three organizations, viz, Evacuation Hospital No. 2, Base Hospital No. 51, and the orthopedic battalion.¹⁰

FUNCTIONS

Evacuation hospitals which reached the zone of the armies were operated directly under the jurisdiction of the army surgeon, and not under the chief surgeon of the line of communications, as our regulations had stipulated previous to our entry into the war.¹¹ The army surgeon, cooperating with the deputy of the chief surgeon, A. E. F., at G. H. Q., supervised their distribution, location and expansion, coordinated their activities with the service of the front; and through a medical officer assigned to the regulating station, effected their clearing by hospital trains. In the few instances when evacuation hospitals were not located on a railway line, the army surgeon effected their evacuation to a railway by ambulance companies under his command.¹¹ These evacuation hospitals, too, were supplemented by mobile hospitals which performed similar functions but were smaller and more mobile. (See *infra*.)

While in certain respects our field hospital, as in France, continued to be an emergency hospital for the battlefield, it became more nearly a magnified and improved dressing station than a hospital. This made the evacuation hospital the actual theater of our surgical effort there, especially during very active periods. The evacuation hospital, plus the mobile hospital and the mobile surgical unit, thus constituted the hospital for early surgery; upon it, to a very great extent, the patient's life and limb depended. It proved necessary in this hospital to apply, with great rapidity, to the most urgent cases, the best treatment known to modern surgery in order to secure satisfactory professional results; and at the same time, in order to secure the best administrative service, it was likewise necessary to evacuate its patients as quickly as possible to provide beds for incoming wounded. To a certain degree these needs conflicted, and it was only by the utmost diligence and perspicacity that they could be reconciled in periods of stress, or, that, if this proved impossible, their conflict could be reduced to a minimum.¹²

It should be explained here that our medical service did not accept the tenet of our allies that the more lightly wounded should receive preferential attention in the zone of the armies because of the greater probability of their return to active service and also because a greater number could thus be cared for in a given period.¹³ Nor did it accede to the policy, which was followed by our allies generally, of making evacuation hospitals practically immovable and of large size. Some similar establishments in the French army, located from 15 to 20 km. (9 to 12 miles) back of the line, accommodated as many as 5,000 patients, and the English, by grouping their casualty clearing stations, made arrangements which in general effect were the same.¹⁴ This had secured prompt treatment of all the wounded it is true, during the long period of trench warfare, but proved to be a tactical error when the war became one of movement; for when the armies which the hospitals served retired in the face of overwhelming onslaughts by the Germans the French lost many thousand beds.¹⁵

Increased knowledge of surgery proved that removal of devitalized tissue and foreign bodies from slight wounds could be accomplished successfully back of the zone of the armies and that surgical intervention within 12 hours was not essential in the slighter cases in order to prevent infection by the gas-forming bacilli.¹⁴ The earlier belief that early operation was essential in all cases had had an important influence, however, in causing the British and the French to locate so many large, relatively immobile hospitals so close to the front. Their entire evacuation hospital service was also profoundly influenced by the fact that shell wounds, so common in this war, were practically always infected by gas-forming organisms and that, in order to get the best results, operation was advisable within 12 hours after injury.¹⁴ At such operations, foreign bodies were removed, the wound débrided and left open until bacteriological examination showed that its closure was warrantable. This last procedure, in uncomplicated flesh wounds, was usually possible in 4 to 5 days and recovery was complete in from 3 to 5 weeks.

No one questions the necessity for very prompt action in serious wounds, but it had also been believed that return to the colors would be expedited if the slightly wounded as well as the seriously wounded could be operated on within the 12-hour limit of time. Later observations showed that practically the same results were obtained in the slightly wounded, without retained foreign bodies, if operation were delayed 24 hours or even longer. Upon this knowledge was based the American policy of sending such cases farther to the rear for operation if pressure was such that their numbers would overtax an evacuation hospital of approximately 1,000-bed capacity at the front.¹¹



FIG. 23.—Evacuation Hospital No. 2, Baccarat, France, June 28, 1918

Our evacuation hospitals then sought especially to give surgical treatment to severely wounded patients whom it was not advisable to send, unoperated upon, farther to the rear, and then to hospitalize such patients until they were fit to be moved, so far as might be necessary, but only, as circumstances permitted, to hospitalize here also the less seriously injured. As a rule, the treatment given the latter was temporary, though sometimes it was definitive, but this was only if the demand for beds was not pressing. In times of great stress there were never enough evacuation hospitals at the front to give full surgical attention to all the wounded; nor was it proposed that there should be, for such provision would have required an excessively large hospitalization in the zone of the armies. Except for the small percentage of very seriously

wounded who had to be hospitalized in evacuation hospitals because they could not endure transportation to the rear, our evacuation hospitals were merely relay or clearing stations in the hospitalization and evacuation chain.

While the more seriously wounded properly required two weeks, hospitalization after operation before being transferred, sometimes the demand for beds was so great that the more seriously wounded had to be removed in less than half that time. Brain injuries, if operated upon here, were kept, if possible, at least 10 days. Knee-joint, abdominal, and chest wounds were retained from 10 days to 2 weeks when possible, but patients with these wounds



FIG. 24.—Operating room, Evacuation Hospital No. 2, Baccarat

sometimes were evacuated after 5 days, or, very rarely, in even less time. Patients with compound fractures of the femur were kept as long as possible.¹⁴ It was estimated that about 10 per cent of the beds in evacuation hospitals would ordinarily be used for the severely wounded, and the remainder for patients to be evacuated immediately. It was recognized, however, that this proportion, like many others pertaining to evacuation hospitals, was subject to radical modification in order to meet the constantly shifting military situation and its hospital requirements.¹⁴ Elasticity of these hospitals proved essential in both size and service.¹⁶ The principle of mobility was stressed, except in the case of certain evacuation hospitals, which, because of

peculiar circumstances, were in effect immobilized; for example, Evacuation Hospital No. 1 at Sebastopol Barracks, just north of Toul.⁴

As has already been noted, our evacuation hospitals had officially 1,000 beds. The capacity and organization of individual evacuation hospitals were based, to a certain extent, on an estimate of what the maximum daily admissions would be. With some exceptions these did not exceed 1,000, but on some occasions there were more than 1,400; for example, in Evacuation Hospital No. 9, on October 10, 1918, during the Meuse-Argonne operation.¹⁷ Excessive pressure, due to the intake of more patients than an evacuation hospital could



FIG. 25.—Sterilizing plant and tentage, Evacuation Hospital No. 2, Baccarat

care for, was controlled by sending patients out on "preoperative trains," though some hospitals objected to this practice on the ground that it indicated inability of the institution to handle patients properly. It was contended also that the time which must elapse before these patients could be delivered by train to hospitals in the rear would exceed the length of time they would have to await operation in the evacuation hospital concerned and that their chances of infection would thereby be increased. In any event, these patients were transferred from the evacuation hospital only after very careful examination and re-dressing. The transferable were held to include those with such injuries as fractures caused by rifle and machine-gun bullets, but without much bony destruction; gutter wounds; and flesh wounds with retained bullets.

But local demands and the resources available at the time really determined what classes of patients should be transferred. An important factor influencing the use of preoperative trains was the number and rapidity of operating teams available at the evacuation hospitals. The number of operating teams was increased in the evacuation hospitals; their work was speeded up. The number of unoperated patients it was necessary to evacuate from the evacuation hospitals during the Meuse-Argonne operation fell from above 1,370 in the first phase of that engagement to 293 in the second.¹⁸

When the 24-hour intake of patients at an evacuation hospital exceeded 1,000 the routine plan of work ordinarily had to be changed if all patients were to be cared for locally. The necessary speeding up of operating teams under such circumstances depended on their good organization. Shifts, at the eleventh hour, generally proved unsatisfactory, and it was found that sometimes, due essentially to inadequacy in number, experience, and speed of operation teams, preoperative trains had to be used. How severe the pressure was at times is indicated by the fact that, in the six weeks subsequent to June 13, 1918, Evacuation Hospital No. 7 at Coulommiers, near Chateau-Thierry, received and evacuated 27,000 cases. Between June 14 and November 11, 1918, it admitted more than 50,000 patients,¹⁹ while Evacuation Hospital No. 9 admitted more than 32,000 during the Meuse-Argonne operation, September 26 to November 11, 1918.¹⁷

Generally speaking, more than half the patients admitted to evacuation hospitals in the zone of the armies were surgical cases, and of these about half were operated upon. Data on this subject, however, are incomplete, and these figures apply only to those hospitals which reported on this subject.

Evacuation hospitals at the front often received patients from several divisions. Thus, during the Aisne-Marne operation, Evacuation Hospital No. 4 received patients from five divisions, and from September 26 to November 11, 1918, it received patients from 11 divisions.²⁰

The most essential details for the successful operation of an evacuation hospital proved to be the following: Location at a suitable place—on a railway siding if possible; free mobility; rapid and systematic pitching and striking of tents; rapid entraining and detraining; elimination of unnecessary matériel which would impair mobility; the use of tentage or movable barracks rather than permanent buildings if these did not lend themselves readily to hospital purposes; provision of tentage and blankets for crisis expansion for at least 500 beds; adequate personnel, each officer and man assigned according to his best abilities; well-balanced, resilient organization; appropriate, systematic local distribution of patients based on their condition and on the availability of beds; instruments for 10 operating teams; high speed without haste or carelessness in examining, distributing, operating upon, and evacuating patients; medical supplies and rations for 10 days for total strength, including crisis expansion; provision for accurate records and for care of patients' valuables.²¹



FIG. 26. Evacuation Hospital No. 1, Sebastopol, Toul

LOCATION

The site proposed for an evacuation hospital was inspected either by the army surgeon or by a competent assistant.²¹ The preferable location was one as near the front as possible, yet safe from direct or indirect artillery fire—usually at a distance of from 15 to 25 kilometers (9 to 15 miles) from the line—accessible by good roads from the forward area to be served and by hospital trains from the rear. Location at a point not accessible to hospital trains proved to be a tactical error. Even when troops were moving forward, it was found better to retain an evacuation hospital at the railhead and to



FIG. 27. Tentage used by Evacuation Hospital No. 1

transport the wounded an increasing distance to it by ambulance than to move it forward and relay its transportation patients to the railhead by ambulance.^{a 22} Other desiderata in the selection of a site were proximity to fuel and water supplies and separation from ammunition dumps, depots, aviation fields, and cantonments which would be searched by enemy fire. A site on a railway spur at least half a mile from any of these formations was chosen whenever possible. Suitable buildings were another prime de-

^a The French did not call any hospital an evacuation hospital if it was removed from a railway. They designated it an "ambulance," that is, a field hospital or "Groupe d'Ambulance." Our Medical Department learned that an evacuation was such in name only, if an evacuation hospital was located at a distance from a railway. The method of the French in utilizing evacuation hospitals proved exceedingly valuable; they selected a site, built a railway siding to it, prepared the loading quay, and then brought in the unit.

sideratum, or, failing these, suitable ground space for tentage. Sometimes, as already indicated, existing buildings were supplemented by tentage. Occasionally it was easier to utilize, for an evacuation hospital, tentage which could be pitched where desired than to adapt available buildings to its needs. However, tents did not prove so satisfactory as Adrian barracks, as they could not be so well heated, ventilated, or lighted.

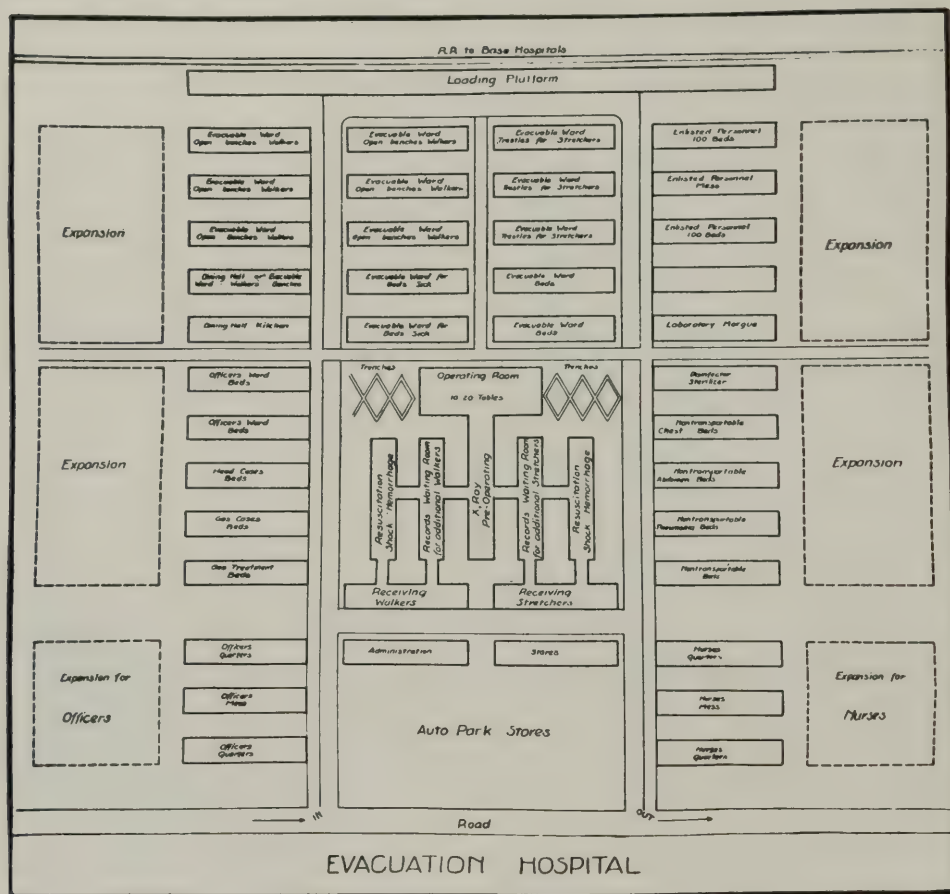


FIG. 28.—Conventional ground plan of an evacuation hospital

Having selected a site and having secured for it the approval of the coordinating section of the army general staff concerned (if the evacuation hospital was to occupy a site on a railway, and transportation was available), a request was made in memorandum form to the operating section of the army general staff. This produced the necessary order, which was accomplished by the troop movement bureau of the coordinating section of the army. If the site selected was beyond the limit of army control, a request made upon General Headquarters, A. E. F., by the army commander was necessary.²¹

The commanding officer of the hospital prepared, in advance if possible, diagrams for illustrating the layout of tents to supplement available buildings. At any rate he had a typical layout prepared and was ready to use this, or to modify it as required by local conditions.²¹

In the summer of 1918 an attempt was made to provide separate evacuation hospitals for nontransportable, seriously wounded, and ambulant patients, as the case might be; but this method of disposal usually broke down at

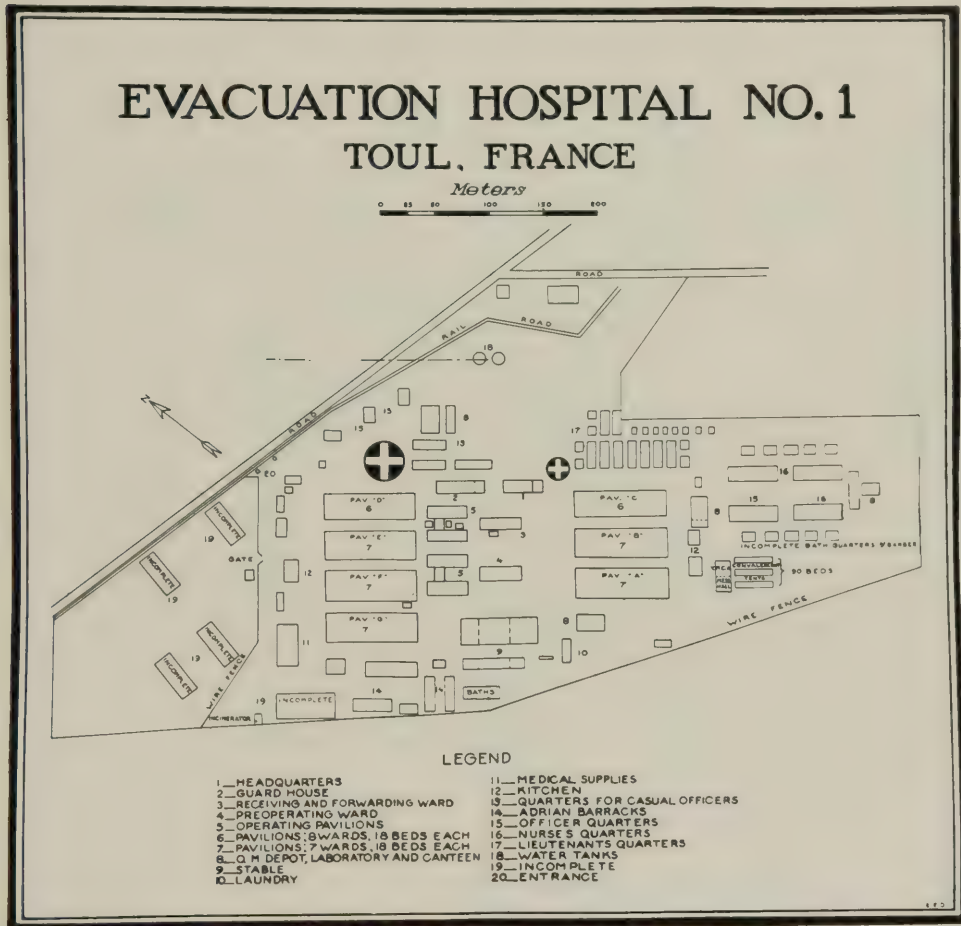


FIG. 29

times of pressure, probably because of the difficulty attendant upon sorting patients at more advanced positions. Because of this difficulty and of the difficulty of properly routing different classes of patients from the triage, the plan in question was soon abandoned. While it was true, so far as evacuation hospitals were concerned, that it did not prove possible to segregate seriously wounded in certain units, this did not apply to mobile hospitals. These units, which worked nearer the front than did the evacuation hospitals, solely received wounded who would almost certainly have died if transported

EVACUATION HOSPITALS 6 & 7 SOUILLY

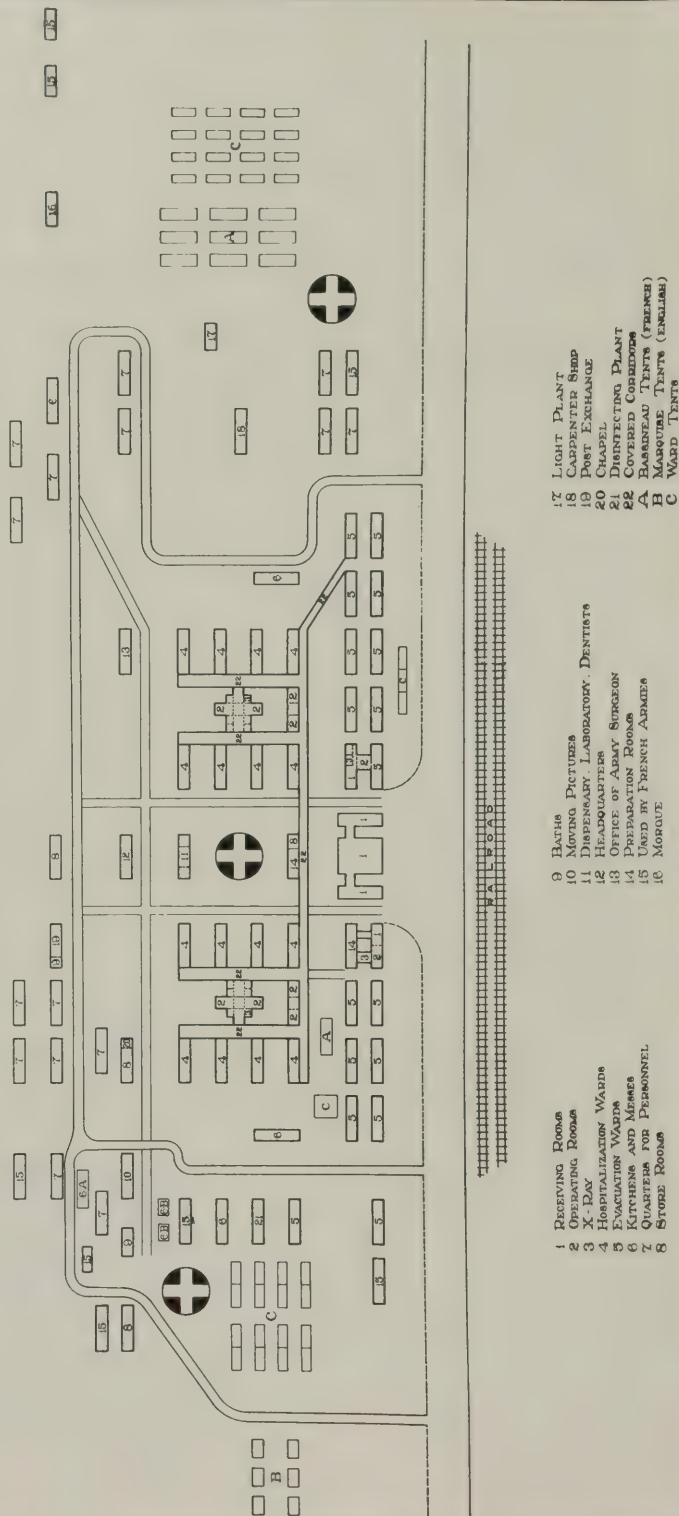


FIG. 30

to the evacuation hospitals, and they proved to be of great value for this purpose. With this exception, however, it was found that the provision of special hospitals for special patients was wasteful of transportation and of personnel, even in fixed warfare.²³

Supplementary professional groups for evacuation hospitals were provided, however, for special types of patients; namely, contagious, neurological, gas patients, and the like. Sometimes, special wards for these were set aside in the hospital itself.

In order to facilitate delivery of patients from the triages, as the war progressed, evacuation hospitals were grouped as close together as possible; and instead of increasing their number, their size was increased and their evacuation was expedited. The importance of grouping evacuation hospitals

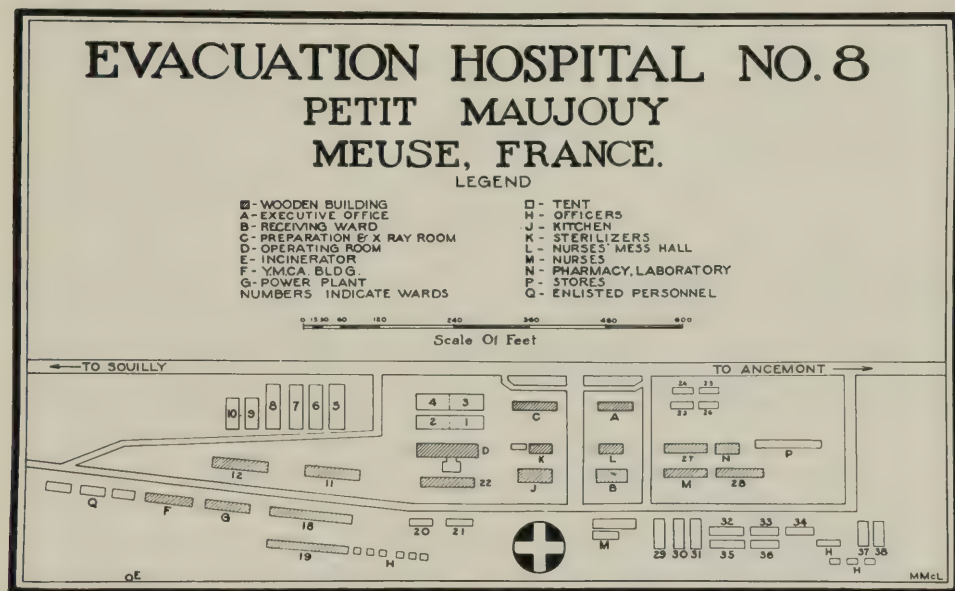


FIG. 31

must be stressed. It was easier for an ambulance driver to find his proper destination with a few closely grouped hospitals than with many scattered ones, and then, too, concentrated units were more easily coordinated and evacuated than separated ones.²³

From the beginning, routes to evacuation hospitals were conspicuously marked by pasteboard signs, but as these were easily destroyed in inclement weather the inspector general, A. E. F., recommended that they be replaced by sheet-iron signs, marked with luminous paint, and that these be made a part of the equipment of the hospital.²⁴ This plan was bettered in the Meuse-Argonne operation by providing a metal box with removable front. At night this contained a lantern. It was posted at crossroads as a sign-board. For the box a number of metal sheets, perforated to indicate different hospitals and their locations, were provided. This plan afforded a

luminous sign at night. The appropriate metal sheet was inserted on notice from the rear, and the stream of wounded men diverted to the hospital best prepared at the time to care for them.²³

In locating evacuation hospitals an ideal arrangement was to pitch two of them in juxtaposition, so that, when troops moved, one hospital could transfer the patients to the other and could then participate in the movement without delay, the other hospital clearing its patients and following later if need be. In order to approximate this method it was proposed, in view of the limited number of evacuation hospitals, that each be made to consist of two sections, one of which, much more freely movable than the other because of being supplied with cots instead of beds and other light equipment, should accompany troops, while the other section disposed of remaining patients and rejoined its companion section later when more transportation became available. This plan, however, was put into operation only on a very limited scale, as the 12 mobile hospitals which were organized and the mobile surgical units proved better suited for quick movement than evacuation hospitals.²¹

To serve as notice to enemy flyers, the site of an evacuation hospital was marked at first by a black cross of tarred stones in a whitewashed circle of stones, by strips of muslin 30 feet long, forming a cross, or by similar devices.²¹ Later, it was found advisable to equip such hospitals with a cross of white canvas, each arm $9\frac{1}{2}$ feet long and 6 feet wide. This was fastened firmly to the ground, preferably on a plot of green grass, before any other detail in respect to locating the hospital was given attention. If green grass was not available, black cinders were placed in the quadrants. Experience showed that a white cross on a green or black background was much more conspicuous than a red cross when viewed from the air.²¹

The surgeon of the First Army reported that many hospitals were spared by enemy airplanes because of their being marked in the way indicated. A further reason for employing the white cross, instead of the red, was found to be that the former showed up in photographs taken from the air and the red cross did not, as it blended with its background. Enemy observers took photographs during the day, and at night bombing planes discharged their missiles against points indicated in these photographs unless the cross marking a hospital site was plainly observable.²¹

The amount of transportation required for the 1,000-bed unit (30 French freight cars on 90 three-ton trucks), considerably restricted the mobility of the evacuation hospital, for it was not always obtainable. Sometimes, too, as many as 120 trucks were needed to move such a hospital.²⁵

The commanding officer of each evacuation hospital had available at all times a schedule which he had prepared for loading his unit on railway cars.²¹ This was based on its weight in tons, and on its cubic displacement. Besides the maximum authorized equipment, 3,000 rations were included. The number of each class of cars required, that is, passenger, box, or flat cars, was also carefully determined, and requisitions specified exactly the number of cars by class. When possible, the commanding officer obtained,

with the other cars, a car for use as a kitchen, which was open at the ends to allow, en route, easy communication with passenger cars.

After once being located within the zone of the armies, further movements of evacuation hospitals were made, as a rule, by motor-truck trains, railway trains not usually being available there. It was found that if movement by truck was not a long one, the most satisfactory plan was to transport the different departments of a hospital by successive trips of one train made up of not more than 20 trucks.²¹ This method made a comparatively small draft on the army automobile pool and so facilitated obtaining the necessary vehicles. Neither did it delay reestablishment of the hospital, for after the first truck-train load had been received at the new site, preparations progressed there while, at the same time, property still at the former site was being made ready and forwarded. The commanding officer had a truck-loading schedule which provided that the first personnel and equipment to arrive should be the commissioned officers, nurses, cooks, and surgical department, with a sufficient number of enlisted men to assist in the preparation of the new site, and tentage and equipment for this personnel, for kitchens, and for operating room.²¹

EQUIPMENT

The equipment originally issued evacuation hospitals proved fairly satisfactory, but tentage for use of personnel during inclement weather and for special wards was sometimes inadequate.¹³

Three ground sheets similar to paulins were furnished for each tent, lumber for flooring rarely being available, and some floor covering being essential to reduce the discomfort caused by mud and dirt.²¹

Enough instruments to supply as many operating teams as the hospital might utilize were essential. It was found better to supply each hospital with such equipment for 10 teams rather than to supply individual operating teams with instruments and equipment and thus to restrict their mobility.¹³ By pooling the necessary instruments it was also found that fewer were necessary.

Throughout the hospital section equipment was kept as simple as possible consistent with efficient service. Each ward was provided with the usual ward furniture, and at the entrance a cubicle was screened off for the nurse. This contained a small apparatus for heating water and food. In the infectious wards beds were cubicled by sheets to prevent cross infections.

Electric lights were found to be superior to acetylene, as acetylene lamps were exhausted after four hours and were extinguished invariably by the jar from the discharge of a near-by gun or bursting shell.²¹ Duplicate electric generators were provided for illuminating at least the receiving ward, preoperative ward, operating room and office, and for activating the X-ray plant. A telephone system installed by some evacuation hospitals proved of the greatest value both in the saving of messengers and in speeding up interior service.²¹

Whenever possible, field laundries were assigned to these hospitals, especially if the hospital were located, as was often the case, at a point where the laundry work could not be done by civilians.²¹ The output of a field laundry varied considerably but averaged about 1,200 pieces of flat work a day. Field-laundry installations were movable and were operated by two men of the permanent hospital personnel. Field laundries were supplemented by laundries of a less mobile type operated at the army medical depots which afforded a linen exchange. One of the difficulties with these mobile laundries was the extemporization of drying rooms which were found indispensable in winter in the humid climate of France.²¹ The inspector general, A. E. F., reported as follows, concerning the laundry facilities of these units during the Meuse-Argonne operation:²⁴

Some hospitals have no laundry facilities, and in others facilities are far below hospital needs. This made it necessary in some cases to salvage soiled linen instead of washing it, and requisition was made on supply depots to replace that salvaged, taxing the linen supply of the dumps. The supply of laundries, though the French sold us all they could, was always limited, and the shortage was made good to some extent before the close of the operation.

PERSONNEL

The personnel of an evacuation hospital, as officially prescribed, consisted of 34 officers and 237 enlisted men, but in practice this number was at times greatly increased.²⁶ For example, Evacuation Hospital No. 1, at its maximum in September, 1918, had 97 officers, 92 nurses, and 674 enlisted men.⁴ In the Meuse-Argonne operation there was in general a shortage of personnel in all units of this character, especially for their labor, fatigue duty, litter bearing, and grave digging, though the situation improved as the attack progressed.²⁴ As in other hospitals, the commissioned personnel was divided broadly into administrative and professional groups, though many of the officers in the latter category, for example, the chiefs of services, ward surgeons, and others, performed, as well, certain administrative duties. The administrative staff of the hospital performed the duties usually incident to hospital administration, though on account of the peculiar character of their unit these were considerably modified in some respects. In many hospitals the commanding officer was constantly engaged in inspecting and coordinating the services. As a rule, therefore, the adjutant cared for correspondence and assumed certain office duties analogous to those of an executive officer or a chief of staff. The quartermaster, selected from the Quartermaster Corps, was bonded so that he might discharge the duties of a disbursing officer, and he often performed the duties of a medical supply officer as well. In such a case he had charge of all supplies, including clothing, subsistence, fuel, and other necessities which normally pertained to his office, as well as performing the usual duties relating to transportation, installation, and operation of the lighting plant and laundry. Frequently he was the motor transport officer for the unit. The quartermaster also was charged with the maintenance of utilities service and had at his command several artisans, usually carpenters, a plumber, a tin-

smith, and an electrician. The work required of them was often indispensable, urgent, and of large proportions, so that only exceptionally good workmen were qualified for service on this force.²¹

Each unit had its fire marshal, fire-fighting force, and salvage squad, detailed from the permanent personnel. These were drilled until proficient and then exercised usually at irregular, unexpected intervals. Despite the inflammable character of the structures which these hospitals habitually occupied—tents or Adrian barracks—it is a noteworthy fact that no serious fire occurred in any of them. This is all the more remarkable because of the occurrence of a number of small fires, usually attributed to lighted cigarette ends, and the paucity of fire-fighting apparatus. Fire risks in these units were very great, and the prevention of serious conflagrations is attributable chiefly to the vigilance to all those concerned.²¹

Salvage proved difficult because of shortage of personnel, and much property was lost before the Salvage Department arranged to collect property at these units and transport it to dumps.²⁴

A specially qualified officer was selected to command the detachment of enlisted men, Medical Department, to train them in their military duties, to care for their service, pay, and other records, to command the guard, and to supervise police of the unit.²¹

The registrar, frequently an officer of the Sanitary Corps, usually discharged also the duties of a statistical officer. He supervised the preparation of the cards for sick and wounded, notified the chief surgeon, A. E. F., if epidemic disease appeared, collected and forwarded individual medical record cards, X-ray plates, records, and histories of cases evacuated, and in case of death notified the chief surgeon, A. E. F. At 6 a. m. daily he reported by telephone or by courier to the evacuation officer of the army the number of empty and occupied beds, the number of admissions, classified as sick, wounded, and gassed, for both officers and men, and the number of deaths during the preceding 24 hours. Another of his duties was the daily posting of a diary which gave appropriate data concerning movement of the unit and the number of patients admitted, classified as medical, surgical, or gassed. These patients were subclassified as infectious or noninfectious medical, severe or slight surgical, while the gassed were classified, if possible, according to the kind of gas used. This officer also kept a daily record of the number of operations on patients with slight and severe surgical conditions, and the number of deaths, with name, cause, time and place of death, and number of grave. One of the subjects considered in this war diary was the number and class of patients evacuated, classification being made both according to the condition from which patients were suffering, whether they were sent out recumbent or sitting, and whether they were commissioned or enlisted.²¹

Still another member of the administrative staff was the mess officer, who was often selected from the professional staff, and who supervised this important service in addition to his other duties. Two diet cooks and a dietitian were provided if possible. Field ranges did not prove so satisfactory as did

the rolling kitchens, supplemented by five army ranges No. 5, or by gasoline ranges.²¹

The chief nurse performed the duties usually incident to her position.²¹

A chaplain proved indispensable. Assignments were made irrespective of the ecclesiastical denomination of the incumbent, who supervised and promoted both religious and moral activities. The latter he interpreted in their broadest sense, including among them diversion for patients and personnel.²¹

The professional groups were headed by the chiefs of the surgical and medical services, in their respective jurisdictions, but an approved plan in some units was to have the surgical chief limit his activities to the operating area and to entrust to a director of wards the supervision of all other professional matters within this specialty. Usually, however, the chief of the surgical service supervised all triage activities, together with those in the operating room, shock wards, and other surgical sections of the hospital, organized teams to care for special classes of patients, according to the known ability of each member, selected patients for operation, distributed surgical patients to appropriate teams peculiarly well fitted to care for them, and assisted in determining the need for hospital trains. The chief of the medical service supervised the medical work to secure prompt and skilful treatment of medical and gassed patients. Often he was the assistant chief of the triage service, alternating in this duty with the surgical chief.²¹

The surgical teams were a very important factor in the service of these hospitals. Usually, four of them were organized from the personnel on duty in the hospital, and these were supplemented as occasion required by teams drawn from other sources.²¹ Usually there were 7 or 8 teams on duty, but their number was increased, according to needs, to 14 or more.²⁷ It was found advisable to add to the personnel of each hospital 12 surgical and 2 gas teams, each surgical team consisting of 2 surgeons, 1 anesthetist and 2 nurses.²¹

Experience showed that the best chiefs for teams were not usually operators with the highest civilian reputation. Such older men often proved unadaptable, unable to learn quickly, and lacking in physical endurance. It was an unfortunate fact that the older men, because of their civilian professional standing, continued to be sent forward with teams long after other nations had learned that such details were better filled by younger men, because of their greater endurance and adaptability.^{b 13} In times of great pressure, teams were sometimes split, but good results were obtained then only if the assistant showed himself unusually competent. On rare occasions it proved better to keep a team on duty 18 hours rather than to split it.¹³ Most operators were able to endure this ordeal during a short emergency, but in order to make the method effective, consideration had to be given, in making details to teams, to take cognizance of each operator's endurance.

As a rule the medical officers who proved most generally valuable in evacuation hospital service were those who had been graduated not more than 8 or 10 years before entering the Army, as they were more vigorous and more

^b Our service fully recognized this principle, but was unable to apply it because of the urgency of our need for operators at the front.

adaptable than their seniors. Officers were usually assigned in the proportion of one medical to three surgical, an excess of medical trained personnel being detailed to duty in the wards for ambulant wounded, the receiving ward, dressing rooms, and for similar service.¹³

SPECIAL DEPARTMENTS

The departments of an evacuation hospital, other than the administrative, whose services are discussed above, were the following: Receiving ward, dressing tent, preoperative ward, X-ray room, examination and operating rooms for patients with serious conditions, operating room for patients with minor conditions, sterilizing room, pharmacy, laboratory, dental clinic, shock ward, wards for special patients, other classified wards for retained patients, medical, surgical and gassed (if these latter were not cared for in neighboring hospitals), and wards for transportable patients to be evacuated. Other departments of the hospital which require no discussion here were the mess halls and kitchens for patients, officers, nurses and enlisted men, quarters for duty personnel, and a recreation tent which was provided whenever possible.²¹

Space allotted the several departments of the hospital varied according to a number of very mutable conditions, that is, severity of combat, number of operating teams available, train service and other considerations. The ground plan varied with the terrain, available buildings, water supply, distribution, and kindred conditions, but whatever plan was adopted, the necessity for short litter carriage received careful consideration. Evacuation Hospital No. 5 arranged five Bessonneau tents in line. These five tents provided successively for admission, dressing, X-ray examination, preoperative treatment and operation. Patients were carried through all of them if necessary, beginning with the admission tent; otherwise they passed out of line to the appropriate ward after being taken to the tents where they received necessary attention. Location of the receiving ward was indicated by a conspicuous sign. For use at night, an illuminated sign, which could not be seen from above, was sometimes employed. This consisted of a metal box, its face perforated by appropriate lettering. Habitually this ward was placed at the side of the hospital opposite to the evacuation ward. It occupied a well-heated tent or barrack large enough to accommodate from 20 to 60 litter patients and had benches for sitting patients. It was also provided with a quantity of blankets, splints, and litters for replacement issue to ambulances which left such articles with patients they delivered. The point where these articles were stored was sometimes designated by a conspicuous sign, "Blanket, Splint, and Litter Exchange."²¹

At the receiving ward commenced one of the most important procedures of the service of the hospital, that is, the sorting of patients and their proper distribution. This sorting and re-sorting continued throughout all the departments to which patients successively were sent. It was essential that the stream of sick and wounded move systematically, that there be no reverse or cross currents. The method followed differed somewhat in different hospitals, but that described below was the one generally employed.

The quota of personnel on duty in the receiving ward also differed somewhat in the several hospitals, but usually it consisted of 2 officers, 1 sergeant, 8 clerks, 2 guards, and 8 or 10 litter bearers. Officers on duty here gave emergency treatment in case of hemorrhage, supervised litter bearers' activities, the preparation of records, and the care of valuables, made appropriate note on the admission card of a patient if antitetanic serum had not been administered, and distributed patients to wards for gassed and medical patients, to the dressing tent for walking wounded, to the preoperative ward or to the shock ward, as the case might be. Records were made here giving each patient's name, his military designation, diagnosis and any other necessary data obtained from personal interrogation and from an examination of his field card and diagnosis tag.¹³ If the patient was unconscious these facts were obtained from other patients accompanying him, and from his identification tag, as well as from the other sources mentioned.²¹ In some hospitals a nominal list was usually made on the admission of patients, and two copies of Form 52 were made out for each patient in the wards. One of these was sent to the sick and wounded office at once and this furnished the data for reports called for from the hospital. The other copy was turned in to the sick and wounded office when the patient was evacuated. In other units complete records were made, so far as this was possible, in the receiving ward, and these records were supplemented later by data from the operating room and wards. Walking wounded who were seriously injured were sent to the preoperative ward, tagged for immediate attention. Similar tags were placed on shock patients and on those with tourniquets. Gassed patients were classified as medical and were sent to appropriate wards or to a neighboring unit which provided for such patients exclusively.¹³ If the patient's condition permitted he was sent to his destination via the bathhouse. There patients were treated or bathed with alkaline soap and solution as indicated. Otherwise they were bathed in the ward. If the patient was to be retained he was furnished pajamas; if he was to be evacuated or returned to duty he was given fresh clothing and sent to the evacuation ward.²¹ Medical patients were distributed to appropriate wards. Patients suffering from epidemic respiratory disease were masked.²¹

Attention was given at the receiving ward to the care of patients' valuables. In this important detail service improved greatly after the St. Mihiel operation. Men sent to evacuation wards sometimes retained their valuables, but all others were relieved of them. All were notified that the hospital disclaimed all responsibility for valuables retained by patients. A noncommissioned officer of established probity placed the patient's valuables in a bag and gave him an itemized receipt, ticketing the bag in duplicate. These valuables were kept in a locked box or locker until the patient left the hospital, when they were returned to him, his receipt for them was obtained, and the original receipt was collected. These receipts were retained until the hospital was closed, when they were sent with other records to the office of the chief surgeon, A. E. F. In case of death patients' valuables were turned over to the proper authorities.²¹

In most instances, food and hot drinks were given at the receiving ward, sometimes by a volunteer aid society, to all patients admitted, but in some units

refreshments were given here only to such patients as were sent from this point to the medical and gas wards, others receiving nourishment in the dressing tent or in the preoperative ward. Arrangements were made also at the receiving tent to give food and drinks to ambulance drivers.²¹

The dressing room for the slightly wounded was located near the receiving tent. Its equipment was simple, consisting of one or two operating tables, benches, a table for instruments, and dressings and utensils which had been sterilized in the main sterilizing room.²¹ One or sometimes two officers, assisted by one or two nurses and by two or three enlisted men, were on duty here. At this point a second sorting was effected. The officer on duty examined, dressed, and recorded patients admitted to this department, giving antitetanic serum to such patients as had not already received it. Patients requiring immediate operation or who might be evacuated at once (on litters, if the pressure was great) were properly tagged and sent to the preoperative ward. Patients, whose conditions were not critical, requiring X-ray examination were sent to the X-ray department. Since patients with very serious injuries—for example, injuries of the large blood vessels and even compound fractures of the skull—were sometimes ambulatory, careful attention was given every wound, however slight it might appear to be. At this point, too, careful search was made for injuries of nerves and blood vessels. Provisional diagnosis and administration of antitetanic serum or morphine were noted on the patient's field medical card.²¹

Patients other than those already mentioned were sent to the wards for slightly wounded, or to the evacuation ward, after their wounds had been dressed and they had received hot food or drinks if, as in some hospitals, these had not already been given in the receiving ward. Slightly wounded patients who had developed intercurrent diseases, such as pneumonia, dysentery, or the like, were sent habitually to the appropriate medical wards.²¹

Decision as to whether slight wounds should be operated upon was based on the rate of admissions, the number of surgical teams and their speed. It was found that an experienced team operating 2 tables often handled 35 or 40 minor patients during its shift: later this number was notably increased because of better organization and improved skill, until many teams operated upon more than 60, some more than 80, patients, and 1 team more than 90 patients, during the daily shift.²³ In periods of comparative quiet, at first practically all surgical patients admitted were operated on, and toward the end of the war this was the case even during periods of great military activity. The chief of the surgical service kept his teams fully occupied, the number of preoperative patients transferred being limited only by the surgical facilities locally available.²¹

The third major sorting of patients was effected in the preoperative or classification wards, which received the wounded admitted on litters and certain ambulatory patients sent from the dressing tent. Patients received here required 80 per cent of the professional skill available in an

evacuation hospital. At this point, on alternating day and night shifts, were stationed the most experienced men on the professional staff, selected with regard to accuracy and rapidity of decision and adjustability to the constantly shifting standards which controlled the disposition of patients. The quota of nurses and orderlies in this department was large: usually there were 1 officer, 1 nurse, and 4 enlisted men to each ward. Day and night shifts were provided. Patients were undressed, bathed, if possible, and their wounds were examined and dressed. When possible they were undressed in one tent and their wounds were dressed in another.¹³

Provision of adequate bathing facilities was often, indeed usually, very difficult. Furthermore, the use of the bathhouse, if one was provided, and the administration of baths in wards at night were attended by the danger from airplanes incident to the necessary showing of lights. Many patients admitted after nightfall, whose conditions required immediate operation, were bathed in the preoperative ward and were not sent to it via the bathhouse. Whenever possible the bath hut was equipped with instantaneous heaters, 2 boilers containing 50 gallons each, and shower heads, perhaps as many as 8, and floored with duck boards. As patients usually arrived in the hours from 12 noon to midnight, these baths, in some evacuation hospitals, were used exclusively by the detachment personnel before 8 a. m., by the nurses from 8 to 10, and by the officers from 10 to 12.²¹ As noted, bathing was not always feasible, if patients were admitted in great numbers at night and enemy airplanes were attacking all places which showed lights.

In some hospitals a sketch and description of the wound were made when patients were being bathed, and this record accompanied the patient to the operating room. If the patient's condition was critical, his clothing was not removed until he had been anesthetized, or if he was badly shocked, not until rising blood pressure warranted it.¹³

In the preoperative ward waiting patients received morphine, if this was needed, and hot drinks and food if these had not already been administered or if desired.²¹

The success of an evacuation hospital's service was commensurate in very large degree to its methodical and successive distributions of patients. At the three points mentioned above—receiving ward, dressing room, and preoperative ward—it was essential that there be prompt, accurate diagnosis and immediate distribution in conformity with very changeable demands for evacuations. Distribution from the preoperative ward was determined primarily by the number of patients to be cared for and by the facilities for operating, and not entirely by the patient's condition. When operating teams were limited in number, or inexperienced, a rapid influx of patients would change the standard of selection of patients for operation from all litter and the more serious walking cases; for example, into a very much more restricted class composed chiefly of patients with abdominal wounds, aspirating chest wounds, and fractures of the femur by shell fragments. Under such circumstances patients had to be sent out on preoperative trains until operat-

ing teams were furnished in sufficient number and had acquired sufficient speed to care for them.¹³

Only in exceptional cases were patients sent from the preoperative ward direct to the operating room. These included patients with active hemorrhage, or patients received with tourniquets in place, and with certain fractures without splinting.¹³

The preoperative ward, X-ray section, operating rooms, and wards for the severely wounded were grouped as near together as possible, for it was essential to reduce carriage by litter to a minimum. If this was not done, it was found that litter squads were exhausted after a week's offensive.¹³

Patients were distributed from the preoperative ward according to rate of admission and available operating facilities, into (a) special wards for head, chest, and abdominal patients; (b) shock ward; (c) X-ray ward; (d) operating rooms, and (e) evacuation ward.¹³

In some hospitals, to facilitate their care, patients with head, chest, or abdominal wounds were segregated in a special ward which accommodated both preoperative and postoperative patients. Such a ward was best located next the shock wards but was not attended by the same personnel, the shock teams being fully occupied in their own department. When this arrangement was followed this special ward received, among others, patients who were too badly shocked to undergo immediate operation.¹³

The special ward for head, chest, and abdominal patients, containing those both operated and unoperated upon, was in charge of one of the most competent officers available. If patients with head injuries were to be operated upon before evacuation, the operation was performed as soon as possible. Patients with abdominal wounds were operated upon as soon as their condition warranted. In injuries of the chest, immediate operation was indicated in only a small group of cases: (1) Aspirating chest wounds; (2) large retained foreign bodies; (3) severe injury of bones; (4) complicated lesions of the diaphragm.¹³ Other chest wound cases were sent to this ward for observation and were there placed in the sitting position, given morphine, splinted by adhesive plaster when this was called for, and given other necessary treatment. A combined infection by *B. welchii* and streptococcus usually required operation, but a large majority of the chest wounds did not require surgical intervention. Those requiring it were X rayed, and in many cases it was found that if the missile had originally been embedded in the lungs it had dropped down and could be removed from the bottom of the chest cavity. A thorough examination of the wound was made and drainage established if needed. Preoperative treatment of head, chest, and abdominal wounds, and decision concerning operation required special care, skill, and judgment. Head wounds usually, no matter how severe, did better if treated at once, but such interference delayed the evacuation of the patients concerned by some two weeks. Whether operation should be performed here or deferred until the patient reached a base hospital where he could remain indefinitely, was a highly controversial subject.¹³ From a professional standpoint operation on head

wounds at an evacuation hospital was indicated; from a military standpoint it usually was not. This was one of the instances where general and individual interest conflicted.¹³

For the shock ward, a Bessonneau tent usually was employed, equipped with all means for treating shock, including heat, posture, morphine, fluids, and gum acacia solution, or citrated blood. It was adjacent to the preoperative ward, and in addition to being kept at a high temperature—90° F.—was equipped with hooded tables which further secured warmth to patients in a state of shock. In general, this ward received patients with blood pressure below 100, and other patients as condition indicated.¹³ A large proportion of patients admitted here had fractures of the femur, and most of its other patients had severe and multiple injuries. Patients were usually sent to this ward direct from the receiving department, but occasionally those who had developed shock more slowly also reached it from the dressing room, from the preoperative ward, or from the operating room. When a shock patient had improved and his blood pressure was rising, the chief of the surgical service determined when operation should be performed. As delay now meant increased infection or lost opportunity, such patients had precedence over all others except those with active hemorrhage. Patients who developed shock while under operation were sent to the shock ward or, if necessary, were transfused by the shock team while on the operating table.¹³

It proved convenient to place the X-ray department at one side of the operating room, and the sterilizing room at the other side. If a Bessonneau tent was used for the X-ray department there was room for dental and laboratory departments in the same tent.¹³

The X-ray ward was also close to the preoperative ward and sometimes connected with it. Its interior was darkened by black cloth or paper. Selection of patients to receive fluoroscopic or screen examination was made by the chief of the surgical service. Most patients so examined were those with fractures or foreign bodies. Clean, uncomplicated, perforating bullet wounds were not examined radiologically, as a rule, unless the missile had passed close to a bone or a joint.²¹ Shell wounds, on the contrary, required X-ray examination in every case, as otherwise it was impossible to determine the presence or location of shell fragments in the deeper tissues. Injuries to the cranium were photographed both to facilitate immediate care and to furnish a record for the use of other surgeons who would attend the patient in future.²¹ However, plates were used only for conditions of peculiar interest and where accurate localization of foreign bodies was desired. Whatever the method of examination employed, the radiographer made a record of his findings in a brief note or sketch on a slip which was affixed to the patient's field medical card, or entered it on the card itself. As a matter of fact, the majority of patients operated upon were examined radiologically before they were sent to the operating room, though certain types were operated on without this; for example, those with active hemorrhage or those received with a tourniquet in place, and fractures that had not been splinted before admission.¹³

From the radiological department the patient was sent to the operating room: or if no fracture or foreign body was found, and (before team service was fully developed) if early operation was not possible, to the evacuation ward.¹³

Though operating-room facilities differed considerably in the several hospitals, when possible to avoid it, not more than 10 patients were allowed to accumulate, awaiting operation. A Bessonneau tent, floored with wooden sections (transportable) and provided with a sectional table and one sectional shelf under it running the length of the tent, proved very satisfactory, but two such tents were advisable to meet emergency needs. One of these was sometimes used for minor injuries only.¹³ The top of the table mentioned was used for scrubbing basins and sterile instruments, while the shelf below contained packets of gauze, towels, sheets, bandages, and similar articles, and below this, on the floor, was space for splints. The operating tent was made light proof by black linings with hinged window flaps. From 6 to 10 operating tables—usually 8—were spaced on the side of the tent next the long table holding instruments, leaving a 4-foot passage at their other end for litters, which were made to pass in one direction only. One or, if possible, two electric lights—one on a long cord, and each provided with a cone shade to prevent dispersion of light rays, especially upward—were placed over each operating table. Tables were provided also with slings, rigged up on wires. Each operating team used two tables, a method which speeded up work considerably, especially on minor wounds requiring local anesthesia, and head wounds which required shaving of the entire scalp. Patients with abdominal, head, and chest wounds were assigned to special teams.¹³ Local regulations concerning such matters as suture or nonsuture of wounds, hours of assignment, and conservation of supplies were posted, especially for the information of surgical teams temporarily assigned.¹³

Two surgically clean nurses, with all the available instruments boiled and divided equally between them, could supply any number of teams that could operate in a Bessonneau-tent ward. When each shift went off duty, and, as happened much more frequently, a break in asepsis or other condition required, an entirely fresh layout was made.¹³

An orderly served each shift, noting on each patient's field medical card a statement of the surgeon's findings, the operation performed, and the word "evacuate" or "detain." Patients held included especially those with wounds of the head, chest, and abdomen, with fractured femur, and with shock. A copy of the note made was entered in the operating-room book, supplemented by an entry of the patient's name, his official designation, the interval between injury and operation, the diagnosis, and the X-ray report. The operator's name followed both entries. Decision as to whether patients were to be evacuated was influenced by admissions, concerning which the chief of the service kept the operating teams informed. The field medical cards of patients who died on the operating tables were completed and turned in to the record office.¹³

The operating room was usually in charge of an officer under whom were the recorder, a noncommissioned officer in charge of the enlisted personnel then on duty, a nurse in charge of sterile instruments, an enlisted man who received them from her for each operation, three general utility men to move patients and to hold a leg or an arm to facilitate operation, six litter bearers, one messenger, and one man in charge of sterilizing dressings. The nurse in charge of sterile instruments had a great quantity of these at hand on a table provided for the purpose, and issued them as called for.²¹

When a patient was carried from the operating room he passed the assignment sergeant, who designated the ward to which he should be taken. This was determined from notes on the patient's card—evacuate or detain—and from the record kept here of the location of vacant beds.

Sterilization apparatus was installed in a hut or tent near the operating room, but separate from it, as a rule, because of the danger of fire. This equipment approximated the following articles: Autoclaves of 24-inch diameter, numerous drums for dressings, instrument boilers, and three vessels each provided with a faucet and having a capacity of 25 gallons. The last named were supported on an iron foot base, and all were heated by gasoline burners. There was some variation in this equipment, the personnel of a unit sometime showing considerable resourcefulness in extemporizing apparatus.²¹

The work of sterilization was conducted as a rule by two nurses assisted by two or three enlisted men.²¹

The wards of the hospital other than those mentioned above were for postoperative patients, for other surgical patients awaiting evacuation, for certain medical and for gassed patients. In postoperative wards alternate shifts of one officer, one nurse, and six enlisted men usually were provided. In some units the operating surgeons spent eight hours a day in ward service. These postoperative wards, like others, were assigned to different ward surgeons who might or might not be members of operating teams. As a rule, ward surgeons dressed postoperative cases except when these were difficult and the admissions few. All surgeons in charge of wards carried out the usual administrative record routine, making needed notations on field cards, daily reports of transportable and detention patients, classifying transportable patients as "walking" or "litter," "medical" or "surgical," "officers," and so on. This classification was made daily; in some hospitals, twice a day. In certain hospitals patients were tagged for removal with distinctly colored cards.¹³

In order to utilize the floor space of the evacuation wards to the greatest capacity possible, racks for litters were used, and sometimes for as many as 250 patients. Furnishings of these evacuation wards were few and simple, and there were comparatively few attendants, as patients could care for themselves here to some extent.²¹

Evacuation wards received postoperative patients for evacuation in addition to those sent to it from the receiving ward and the dressing tent.¹³ As hospital congestion increased to beyond the point where patients could be operated upon locally within a reasonable period, naturally more and more

severely wounded patients were sorted out of the preoperative wards and sent to the evacuation wards; for example, gutter wounds, clean, perforating wounds, wounds with retained bullets, gunshot fractures of smaller bones, until it might be that only patients with wounds of the most severe type were retained for operation.¹³

In some hospitals the evacuation officer was the detachment commander; in others he was both receiving and evacuating officer. He usually had charge of the evacuation wards and arranged, under the commanding officer, for hospital trains. Not infrequently he had an assistant who alternated with him, being on duty during the night. The evacuation detail consisted of about 40 men, selected from among the strongest men of the detachment, to perform the exhausting duty of litter bearing.²¹

In the early part of our activities north of Toul, prior to the St. Mihiel operation, when evacuation hospitals were still lines of communications' units, evacuation from them was not made automatically, but occurred only when such a hospital became pressed for bed space, or needed to evacuate patients more or less permanently unfit for military duty. Evacuations were then arranged for by the French, under whom our divisions were then serving, and usually occurred only when a full trainload of transportable patients was ready. The hospital concerned reported to the chief surgeon of the advance section and also to the chief medical authorities of the area. The latter then notified the hospital of the time of the expected arrival of the train and the number of wounded, sitting and prone, which it would carry. Nominal check lists of patients evacuated were furnished the chief surgeon, advance section, and the commanding officer of the destination hospital. At this time the French required reports of all patients to be evacuated in forward hospitals so that they might be cared for in the event of a hurried retreat.¹⁵

Later, during the Meuse-Argonne operation, if an evacuation hospital was not located at a railhead, and it was desired to evacuate by ambulance to one so located, the evacuation officer of the former hospital ascertained how many vacant beds there were in the latter, and upon mutual agreement between the two sent it such a number of patients as it could receive, accompanied by a nominal and classified list of patients.²⁸ The evacuation officer sent to the regulating officer and to G-4, General Headquarters, a copy of this list and a statement of the hospital to which the patients had been sent.

When an evacuation hospital was at a railhead and a train was desired, the evacuation officer of the hospital notified the evacuation officer of the army, on duty with G-4 of the army concerned, stating the number of transportable patients, classified as to medical, surgical, and gassed, prone and sitting; officers and men separately.²¹ G-4 of the army supplied this information to the regulating officer, who then dispatched a train. In time of great activity, as during the Meuse-Argonne operation, the evacuating officer of a group of hospitals in an evacuation center notified the regulating officer twice daily concerning the number of patients to be evacuated, classified as above. With this information the regulating officer reduced the necessity for requests for trains to a minimum, as these figures showed where trains were needed. The

situation was further simplified during the Meuse-Argonne operation by providing that in time of stress the commanding officer of an evacuation hospital could notify the regulating station of his number of transportable patients in detail; with this information, and without any specific request for a train, the regulating officer would supply his need. During all the latter part of our combat activities this method became the rule and not the exception. But, in order to diminish need for such reports, a certain number of trains arrived daily in each evacuation area.²⁰

Trains usually arrived on from one to six hours' notice, but sometimes they were spotted before orders to evacuate were received. If possible, medical and surgical patients were sent out on separate cars. When possible, patients with infectious diseases were segregated when placed on the hospital trains, but this was not always possible, especially during the influenza epidemic. Psychiatric patients were reported to the train commander and placed in a separate group. Weapons of all kinds were removed from the men evacuated and were turned in to the salvage officer, and the patients concerned informed of their disposition.²¹

Litter surgical patients were segregated from ambulant surgical and medical patients, when conditions permitted, especially if the latter were infectious. As a rule, litter patients were loaded first, but when American trains were used it was often possible to load ambulant and litter patients simultaneously. The time necessary for loading a train was determined largely by the number of litter patients, usually from 40 minutes to 2 hours. Between September 8 and December 12, 1918, Evacuation Hospital No. 9 evacuated 36,204 patients on 106 trains, the largest number on one train being 787 (all ambulant).¹⁷

When possible the morgue at evacuation hospitals was equipped with demountable racks for four litters, washing facilities, and galvanized-iron cans. It was often located in the same hut with the lighting unit and the carpenter shop.²¹

Graves were dug by neighboring labor troops if their services could be obtained. This did not always prove practicable, and, with the exception of litter bearing, grave digging proved the hardest physical labor imposed on enlisted men serving at these hospitals,²¹ and one the proper performance of which was attended with great difficulty. Demands on hospital personnel were such that most careful arrangements were essential in order that patients might be adequately cared for, and, at the same time, the dead be properly interred.

MOBILE HOSPITALS AND MOBILE SURGICAL UNITS

Our Medical Department found in the French service two medical units, previously unknown in our Army, organized and equipped to care for the seriously wounded at locations well up toward the front,³⁰ and quickly undertook to provide similar units for like duty with our troops. These were the mobile hospital and the mobile surgical unit called, respectively, by the French *auto-chir* and *groupe complémentaire*.³¹ Until the latter part of 1917,

the French *auto-chirs* were being improved and modified so constantly that scarcely any two were alike in the earlier years of the war. The type they generally used early in 1917 had no hospital facilities, and for this reason it habitually operated in conjunction with an evacuation hospital. Toward the fall of 1917, the need of a hospital section had become evident to the French, and this was added in the Plisson-Proust model (type 1917). This model occupied wooden barracks when these were available, otherwise, large and small Bessonneau tents. The mobile equipment was divided into the following units, each of which was carried in a motor van:³¹ (1) Operating-room truck, with operating tables and other equipment; (2) X-ray truck,



FIG. 32. —Mobile Hospital No. 2, loaded on trucks, and prepared for change of location

with generator for lighting; (3) sterilizing truck; (4) kitchen truck; (5) truck for tentage and bedding. The personnel consisted of two groups, one permanent, as follows: 4 surgeons and 4 assistants; 1 quartermaster; 1 bacteriologist and an assistant; 4 anesthetists; 1 pharmacist; 1 chemist; 1 radiologist and an assistant; 10 nurses, and 35 orderlies. This personnel was considered sufficient to allow the *auto-chir* to function continuously for 24 hours.³² For periods of great activity a second group of emergency personnel, when available, was added as required.

Since the function of the *auto-chir* was to receive seriously wounded close to the front and to give them thorough X-ray examination and surgical treatment before sending them farther to the rear, its value depended largely upon

its elasticity, which permitted it to extend its bed capacity from 100 to 500, and upon its mobility, which permitted it to be pushed forward beyond the railhead, and rapidly from one point to another.

Prime features in the operation of the *auto-chir* were: (1) Early receipt of patients, within six to eight hours; (2) retention of patients with wounds of the head, chest, or abdomen; (3) débridement, with Carrel-Dakin treatment later; (4) primary suture; (5) X-ray examinations; (6) laboratory study; (7) delayed evacuation.³²

Trucks enabled the *auto-chir* to follow troops closely, and it could be made ready for work in a few hours. When possible it was grouped about some building which could be used for receiving and retaining patients. In such a case it might be necessary to send forward only the first three trucks. It was intended that, in connection with suitable barracks, an *auto-chir* would care for 550 patients. Two of them, in connection with an evacuation hospital, could thus accommodate 2,100 cases. Under such circumstances, each separate surgical group remained on duty until 400 patients had been received, then the companion group went on duty for a like period.³¹

The *groupe complémentaire* was a lighter form of *auto-chir* which carried operating and X-ray equipment and was generally used for some special service; for example, for operations on the face.³²

Under date of February 25, 1918, the chief surgeon, A. E. F., wrote the Surgeon General as follows:³³

1. The chief surgeon, A. E. F., has entered a contract for the manufacture of 20 *auto-chirs* and 20 complementary groups for use in connection with the field hospitals and evacuation hospitals. Delivery of these units will be begun on March 1 and continue until August 30 of the present year.

2. As each unit will be equipped with complex machinery, dynamo, X-ray machine, sterilizer, autoclave, boiler, etc., it is very evident that it should not be entrusted to non-skilled labor but should be supplied with sufficient skilled technical personnel to operate and make repairs on the machinery.

3. To this end it is recommended that the following personnel be sent to France in increments of 12 per month for the next five months, the first 12 to be started at the earliest practicable date and the remainder to follow at the rate of 12 per month. Each *auto-chir* should be provided with a team composed of the following men: (a) An electrical and mechanical engineer who is an officer in the Sanitary Corps; (b) a steam fitter who is able to run boiler, autoclave, gas engine, etc., and make repairs to same; (c) an expert automobile mechanic able to repair auto trucks. In addition, a handy man with carpenters' tools would be available.

4. It is requested that a search be made for the above men among the personnel of the ambulance companies at Allentown, Pa., and 4 teams be shipped to France each month until the entire 20 teams are sent.

5. Immediately upon arrival in France it is intended to have these men undergo a course of instruction at the factory near Paris, where the *auto-chirs* are manufactured, so that they may be able to study the assemblage, the operation, and the repairs to the same prior to being put into service.

The *auto-chir* and *groupe complémentaire* were adopted by our service, and their organization was prescribed by General Orders, No. 70, General Headquarters, A. E. F., May 6, 1918, which reads in part as follows:

- II. 1. The developments of modern warfare have necessitated the adoption by the Medical Department of the A. E. F. of two types of mobile sanitary formation which in the French Army are known as *auto-chirs* (autonomes) and *groupes complémentaires*.

These units have been designed in order that facilities for immediate surgical aid to the seriously injured may be brought to the man instead of removing any chance of recovery that the nontransportable wounded have by conveying them an uncertain distance to the hospital.

2. As supplied from time to time, these organizations will be given numerical designations, in a single series for each class, and known, respectively, as "Mobile Hospital No. —, A. E. F.," and "Mobile Surgical Unit No. —, A. E. F."

3. A mobile hospital consists of FIXED sterilizing, X-ray, and electric lighting plants mounted on two motor trucks. In addition, and transported upon ordinary motor trucks to be temporarily assigned as required, are a light frame operating room, tentage, and hospital material sufficient to establish a surgical hospital of 120 beds. The operating features are designed to provide all modern facilities for six surgical teams. Mobile hospitals may function independently, or they may be attached to other advanced sanitary formation to reinforce their X-ray and surgical departments.

4. A mobile surgical unit consists of PORTABLE sterilizing, X-ray, and electric-lighting plants, a light frame operating room, and surgical material mounted on two motor trucks, or on a truck and trailer. It does not provide hospitalization facilities, and therefore can not function independently. This unit supplements the equipment of the advanced field hospital of the division and provides requisite surgical facilities for immediate surgical aid to the nontransportable wounded.

5. The above organizations will be attached to tactical organizations to meet the varying requirements of field service. They will be withdrawn from such organizations when their services are no longer required or there exists a more urgent need for them elsewhere. Their assignment to duty will be regulated by G-4 of the Army to which they are attached.

6. In conformity with the above, Auto-Chir No. 1, now being operated by the personnel of Base Hospital No. 39, is hereby designated and will hereafter be known as "Mobile Hospital No. 39, A. E. F." Groupes Complémentaires Nos. 1 and 2, now in operation, are hereby designated and will hereafter be known as "Mobile Surgical Unit No. 1, A. E. F.," and "Mobile Surgical Unit No. 2, A. E. F."

7. For these new-type organizations, and as they are organized from time to time in the future, the following personnel is authorized:

A MOBILE HOSPITAL

(a) Commissioned:	
Major, Medical Department.....	1
Captains or lieutenants, Medical Department.....	10
Captain or lieutenant, Sanitary Corps.....	1
(b) Enlisted:	
Sergeant first class, Medical Department.....	1
Sergeants, Medical Department.....	17
Privates first class or privates, Medical Department.....	62
(c) Army Nurse Corps:	
Female nurses.....	22

A MOBILE SURGICAL UNIT

(a) Commissioned:	
Captain or lieutenant, Medical Department.....	1
(b) Enlisted:	
Sergeant, first class, Medical Department.....	1
Sergeants, Medical Department.....	3
Privates first class or privates, Medical Department.....	8

Mobile hospitals, numbered from 1 to 11 and No. 39 operated in France. Six others, Nos. 100 to 105, inclusive, organized in the United States, and three others, Nos. 12 to 14, inclusive, organized in France, were ready too late to par-

ticipate in the war.³⁴ It had been planned to provide one for each combat division.

Twelve mobile surgical units were organized at Paris and four others at Joinville, but the latter were not completed in time to see active service.³⁴

Concerning the organization of mobile hospitals in the American Expeditionary Forces, the following extracts have been made from the report to the chief surgeon, A. E. F., by the officer charged with the mobilization of these formations. This was made in the spring of 1919:³⁵

During the latter part of August, 1918, I was instructed by the chief surgeon's office to find a suitable location for assembling mobile hospitals, the place to be suitable for assembling equipment, mobilizing, and giving preliminary training to the personnel, and to have sufficient space for setting up two or more mobile hospitals at one time. As the mobile hospitals had as a nucleus the equipment of the French *auto-chir*, obtained from the French Government at Fort De Vavnes, near Paris, it was necessary to find such a location in the vicinity of Paris.

Previous to this Mobile Hospitals Nos. 1, 2, and 3 had been equipped in the polo field near Paris. This was accomplished by the personnel being ordered to Paris and the equipment obtained by the commanding officer as it became available from the French and from our Quartermaster and Medical Department supply divisions. At that time Mobile Hospital No. 4 was being equipped at the polo field, and the personnel of No. 5 were there awaiting equipment.

What was believed to be an ideal place was found at the Parc des Princes, Port St. Cloud, just outside the city wall of Paris, 5 miles from Fort De Vavnes, and three-quarters of a mile from the Gare Grinelle freight yards. It was being used at the time by the French as an auto park. It had barracks and kitchen facilities for a personnel of 400, automobile sheds covering approximately 48,000 square feet, storehouses with 25,000 square feet of floor space, a building suitable for use as a machine shop; macadamized roads, electric lights, telephone, and sewer systems. The surrounding grounds were well drained, having a hard cinder surface, and were of sufficient size for assembling three mobile hospitals at one time.

This park was obtained and the personnel of Mobile Hospital No. 4 moved from the polo field on September 4.

It was planned to have a sufficient personnel on duty at the park to handle supplies, do the necessary guard duty, and to act as instructors for the mobile hospitals. This personnel was to consist of 4 officers and 68 enlisted men.

Owing to the shortage of Medical Department personnel at that time the above number could not be assigned; so authority was obtained to transfer to the park for duty such personnel of Mobile Operating Unit No. 1 as had not been assigned to other duty. There were also assigned for duty at the park, Lieut. Seldon Rose, S. C., who had previously been on duty with Mobile Hospital No. 39, was familiar with the French equipment of mobile hospitals and, in addition, spoke French fluently; 2 sergeants and 2 privates from Medical Repair Shop No. 1, who were familiar with the French sterilizer truck and portable laundry; and 1 sergeant from Mobile Hospital No. 39, who was familiar with the setting up of tentage and arranging the equipment of mobile hospitals.

With the assignment of this personnel an attempt was made to organize a permanent working force as above outlined, using Lieutenant Rose, on duty at Fort De Vavnes, as liaison officer, and checking the French property as it was delivered; one sergeant and one private on duty at Fort De Vavnes as inspectors during the assembling and testing of the sterilizer and electrical trucks; the mobile operating unit personnel distributed according to their qualifications. During the latter part of September the personnel of Machine Shop Unit No. 352, which had been assigned to Mobile Operating Unit No. 1, arrived from the United States and was retained at the park as part of the permanent personnel. The

attachment of this organization was of the greatest benefit, as practically all of the motor equipment, as received from the French, had to be completely overhauled. Up to this time there had not been personnel at the park qualified to do this work.

Request was made that 5 officers and 30 men be sent to the park for each new unit before the equipment of that unit was received, the idea being that this personnel would be selected from the ones who were to handle the technical equipment and this personnel could be given training by the permanent personnel so that when the equipment was complete the organization could be reported ready for duty without unnecessary loss of time and still have sufficient personnel trained in pitching the hospital, running the laundry and the sterilizer, electrical and cargo trucks. It was planned to have the nurses join a few days before the organization was ready to leave, and the balance of the personnel to join at the time of leaving, or at the new station.

The above plan was carried out in most instances, and as soon as the personnel of a new organization arrived the commanding officer was given a typewritten list of the equipment of the mobile hospital and instructed to make the following assignment of his personnel, and after such assignments were made to have this personnel report to the officer in charge of instruction, who would detail them as follows:

(a) The supply officer, one other officer, and such enlisted men as were required, would report to the park supply officer and check the property and become familiar with its location and packing.

(b) The truck drivers would report to the transportation officer for instruction in driving.

(c) The sterilizer man would report to the sergeant in charge of the sterilizer for instruction.

(d) The laundryman would report to the man in charge of laundry for instruction.

(e) The X-ray man would report to the X-ray technician for instruction.

(f) Balance of the personnel would report to the sergeant in charge of tentage for instructions in erecting the hospital.

Attempt was made to have each organization pitch the entire tentage at least twice, do the laundry work of the camp twice, and run the sterilizer and X-ray equipment until all became familiar with the different details of the work. Truck drivers were kept on the trucks until found proficient in handling them. Nurses when they arrived prepared dressings and were made familiar with the sterilizing apparatus, operating room, and plan of hospital. No attempt was made to give instruction in hospital administration, paper work, except the statistical reports, or obtaining and caring for supplies, as instructions of this character could not have been given with any degree of success in the short time available. All the available time was concentrated in familiarizing the personnel with the technical equipment of a mobile hospital, where it differed from that of a base hospital. This proved to be a very serious mistake, one that was not realized until just before the armistice was signed. It has since been learned that the majority of these organizations could erect their hospitals, operate their laundries, sterilizing apparatus, and X-ray equipment, but were practically helpless when it came to administering a hospital, obtaining supplies, or having their organizations function as such. It was also considered to have been a mistake not to have ordered the entire personnel of the new organization to the park at one time, as men selected by the commanding officer of the unit for particular duty were often found to be hopeless when it came to instructing them in that duty. If the entire organization had been on hand these men probably could have been replaced by better ones.

The question of standardizing the equipment of mobile hospitals was one of the most difficult problems presented. The chief difficulty was that previous organizations had had a free hand in obtaining what they believed they required, obtaining their supplies from the French, the Medical Department, the Quartermaster Department, and the Red Cross. Each new commanding officer obtained the list showing the equipment that the previous organization had started out with, and he not only obtained what this list called for but also such additional articles as he individually believed necessary. These, of course,

varied according to the specialty of the commanding officer. For example, one commanding officer was an eye specialist. He not only wanted all the equipment that previous organizations had taken out, but also all the equipment, instruments, and supplies which an eye specialist might require.

Before attempting to standardize the equipment mobile hospitals in operation at the front were visited and the opinion of commanding officers who had had the most active experience obtained as to what articles of equipment could be dispensed with and as to what additional articles they required. After obtaining this information a list was made up, and this standard list of equipment was given to Mobile Hospital No. 10 and to those that followed it. This equipment could be moved with 20 three-ton trucks, not including the personnel, as compared with anywhere from 35 to 60 trucks required by previous organizations.

Below is a list of organizations that were instructed and equipped at the park from the time of its organization until the armistice was signed, with date of arrival and departure. They were usually reported ready for duty, in so far as their training was concerned, two weeks after arrival. Delay in departure, as a rule, was due to failure to receive supplies from the Medical Department or to difficulty in obtaining transportation after organizations were reported ready.

Mobile Hospital No. 5, mobilized September 4, left for duty September 20.

Mobile Hospital No. 6, mobilized September 4, left for duty September 26.

Mobile Hospital No. 7, mobilized September 16, left for duty October 2.

Mobile Hospital No. 8, mobilized September 20, left for duty October 13.

Mobile Hospital No. 9, mobilized September 20, left for duty October 20.

Mobile Hospital No. 10, mobilized September 25, left for duty November 11.

Mobile Hospital No. 11, mobilized September 29, left for duty November 11.

Mobile Hospital No. 12, mobilized September 26, left for duty January 23, 1919.

Mobile Hospital No. 13 was equipped and assembled, and on November 11 was ordered delivered to the Belgians. Mobile Hospital No. 14 was equipped and assembled November 14, but no personnel was assigned, the equipment remaining at the park.

In October, 1918, Medical Repair Shop No. 1 was moved from Neuilly to the park. The building assigned to this organization was ideal for the character of the work. It had a cement floor, was well lighted, and had sufficient space on the second floor for quarters for the personnel and for storerooms. This not only increased the capacity of the shop but set free a certain number of instrument makers and opticians for work in the shop who previously had been used for running the enlisted men's mess and for guard duty.

The equipment of Mobile Operating Unit No. 1 was received from the United States during October, 1918, and was overhauled at the park, the intention being to send the equipment when completed to the Medical Department concentration area, Joinville (Haute Marne), where the personnel was to be mobilized. Two of the five sections of this unit were ready for transfer on November 10 and the other three the following week, but owing to the signing of the armistice this transfer was not made.

The question of spare parts and replacements for the mobile hospitals after they left the park was taken up and a list compiled covering the principal articles that most frequently became unserviceable. This list was made up after consultation with commanding officers of mobile hospitals who had seen the most active service and from data obtained from the French records at Fort De Vavnes showing the replacements required by the French for their mobile hospitals during the last three years. Request was made for six months' supply of these spare parts, the idea being to furnish mobile hospitals that were operating with the spare parts required direct from the park instead of having organization commanders sending to the French, as had previously been the practice. The armistice was signed before the requisition was filled.

The difficulty in shipping spare parts to the mobile hospitals at the front and in having these parts reach the hospital before it was moved, was to be overcome by having a point nearer the front where all supplies for mobile hospitals could be shipped from the

park and then transferred from that point by truck. This plan was in process of materializing, using the Medical Department concentration area, Joinville (Haute Marne), as the point from which spare parts were to be sent forward by truck, when the armistice was signed and the plan abandoned.

Sometimes our mobile hospitals operated in conjunction with evacuation hospitals,³⁰ but sometimes they served with field hospitals³⁷ or operated independently. Their distribution is exemplified on the map of the Meuse-Argonne operation. Like evacuation hospitals, they were army units. They habitually remained under the command of their respective commanding officers without coming under the administrative jurisdiction of the units to which they were attached. Sometimes a mobile hospital operated independently of any other sanitary formation from a geographic as well as from an administrative standpoint.



FIG. 33.—Mobile Hospital No. 39, when at Challons, France

Thus, Mobile Hospital No. 39 for much of its service at Aulnois was located northwest of Sebastopol, quite independent in every sense of any other hospital.

The administrative methods of the mobile hospital, given below, exemplify the arrangements in mobile hospitals generally, though inevitably there were numerous departures from them in certain details because of differing conditions, resources, etc.

MOBILE HOSPITAL NO. 39 AT AULNOIS

The Yale unit, organized as a Red Cross base hospital, and later changed to Mobile Hospital No. 39, was the first mobile hospital which saw service in the American Expeditionary Forces. Its history is given here at some length, as it was the prototype of other mobile hospitals. Its commanding officer had reached France with funds privately raised to purchase a French

auto-chir, preliminary arrangements having been made in the United States through the French ambassador.³⁸ In point of fact the equipment of this unit was finally paid for by the United States Government, except that instruments, etc., to the value of \$11,000 were purchased by the unit. The equipment was not ready for delivery when the personnel arrived in France, a circumstance which gave its commanding officer an opportunity to familiarize himself with the needs, functions, and organization, of similar units in the French Army. As soon as it was equipped, the unit moved to Aulnois, where it occupied tents and Adrian barracks.

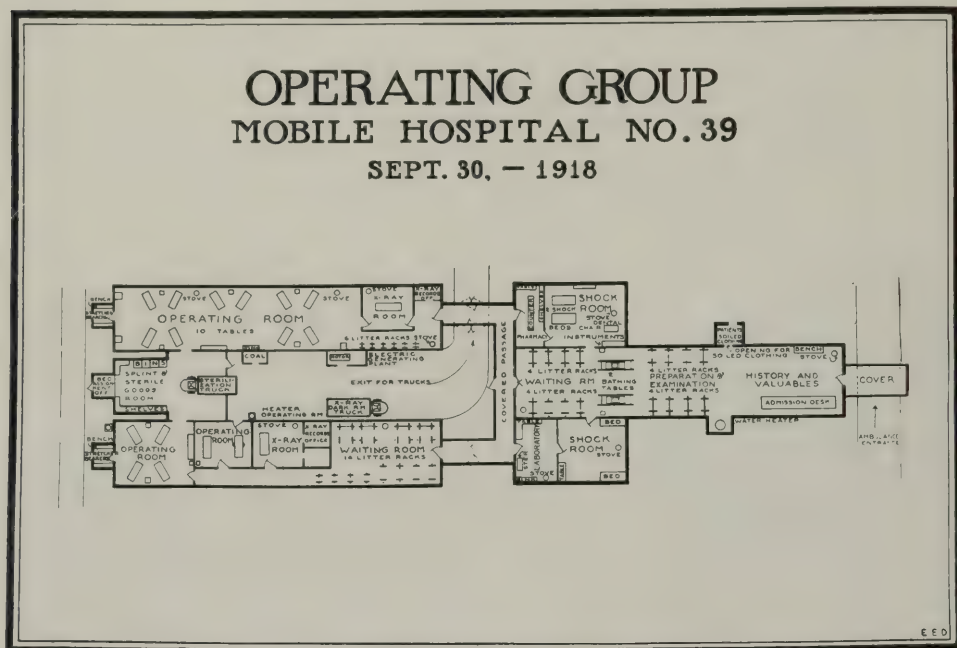


FIG. 34

For the St. Mihiel operation it was expanded to 524 beds. An estimate then made of the personnel necessary for a hospital of this type with 500 beds and 200 admissions per day, was as follows:³⁹

	Miscellaneous	Triag	Wards	Teams operating	Splints	X-ray	Total
Officers.....	.....	2	11	19	2	4	38
Nurses.....	7	.....	44	10	.....	.....	61
Enlisted men.....	126	.....	44	10	.....	.....	180

The number actually on duty was much less, the following being present during this operation: Surgical teams, 14; resuscitation teams, 2; nurses, 14; enlisted men, 180. Several officers, about 6, from Evacuation Hospital No. 11, also reenforced the hospital.⁴⁰

With the personnel then available it was estimated (on the basis of 1 case per team per hour) that 144 major cases could be cared for per day. The hospital was designed for seriously wounded only and it was estimated that 50 per cent of such cases would be nontransportable.⁴⁰ It followed that the limit of bed capacity would be reached, by accumulation of patients, in six days.

As it was anticipated that the reception and operating rooms would be points of congestion, every possible attention was given to the organization of these parts of the hospital in order that wasted motion and unnecessary delay might be avoided. It was laid down as a fundamental rule that from



FIG. 35.—Reception ward, Mobile Hospital No. 39

the time when the wounded entered the front door until they left the operating room, movement must be in one direction only. Every unnecessary maneuver and record was dispensed with so that a maximum output should be secured with a minimum personnel. In general the barrack wards were assigned to nontransportable patients, who gradually accumulated, while the tents of the *auto-chir* were used for transportable patients. This plan allowed the speedy forward movement of the hospital when necessity required.⁴⁰

It was recognized that three essential points would determine efficiency of operation and that these points must be absolutely coordinated. These were: (1) The admission office; (2) the bed assignment office; and (3) the evacuation office.⁴⁰

During inclement weather the porte-cochère protected the wounded and served as a storeroom for a stock of blankets. Immediately on entering the door, accommodation was provided for two ambulance loads of the wounded. These passed to the admission desk, where a team took care of patients' valuables, field cards, and clinical briefs, and made records of casualties and changes. Patients were then passed on to the undressing section, where were installed a series of racks for 16 litters, a chute for soiled or infested clothing, and 2 bathing tables; beyond these were racks for 16 more litters. Here were held patients awaiting X-ray examination. On either side of this portion of the reception ward were shock rooms, kept at a temperature of 90° . Patients in shock were removed at once from the main channel of progress and treated



FIG. 36.—Operating room, Mobile Hospital No. 39

until in condition to be forwarded. If they became operable they were returned to circulation. Both shock rooms were in charge of resuscitation teams.⁴¹

Two operating rooms were provided, one of which was connected with the reception room by a covered passageway. The other had an X-ray room at one end, with a few litter racks, for patients awaiting operation after X-ray examination. Patients not needing to be so examined could be short-circuited by a passage along the side of the room. This operating room had space for five teams and the other room for three, working simultaneously at double tables provided with every improvement and convenience. After operation patients were taken into an end vestibule, where bearers were stationed, under the direction of the bed assignment office located just beyond the vestibule.

The sterilization room, between the two operating rooms, contained the sterilization truck, splint racks, and storage for dressings. A reserve space for preoperative patients was provided in the front end of the operating rooms at the right.⁴²

Admissions.—The admission team consisted of three men for the night shift and four for the day shift. Work was so organized that the field card and envelope, brief (Form 55A), and valuables were handled at the rate of 1 card in three minutes, or 480 per day. A clerk at a typewriter kept the report of casualties and changes posted to the minute. A fourth or fifth man was necessary in order to care for the record of deaths, to complete inadequate diagnoses, to make corrections, and to serve as a reserve. Promptly at 12 o'clock daily the report of casualties and changes was given to the courier. In the routine one man made out this report (Form 22 A. G. O.), another made the brief (Form 55A), and a third made the register card (Form 52). Valuables were placed in a paper bag, marked with the name and hospital number of the patient, and sent to the evacuation office.⁴³

Undressing team.—Immediately behind the admission desk was the undressing station, where clothing was removed by the undressing team and placed in the clothes chute. Three men here could keep pace with four bathing and preoperative tables.⁴⁴

Bathing and preparation of patients.—Two bathing tables, with water heater, formed the equipment of this station. The patient was bathed and his wound prepared for operation. While this was being done, an officer took brief clinical notes and made the diagnosis, while an enlisted man made a sketch of the wound. The team here normally consisted of one officer, a barber, and two other enlisted men.⁴¹

Shock room.—This room, on a siding or detour from the main route, was kept heated by a stove and contained two electric pads. These devices allowed rapid heating of the patient and continued treatment on litters in the open room. On the opposite side of the main pavilion was another shock room used for overflow and for postoperative patients.⁴⁴ Teams also worked the shock room.

Surgical teams.—These teams were in two groups, alternating on eight-hour shifts.⁴⁵ During their rest periods they were expected to do the ward work needed for patients upon whom they had operated. There were two regular teams and nine attached, casual teams. A third regular team did "class B" work. The special emergency teams were made up by cooperation of the ophthalmological consultants. The assignment of the main teams was so arranged that the directors of surgery in the operating room headed the two groups which took alternating periods of duty. One ophthalmological team was assigned to each group, so that there would always be such a team available. There was also a special team for maxillofacial as well as one for neurological surgery.⁴⁶

There were two shifts of six main teams each. These worked during two periods on one day and the next but one. Their rotation brought about an automatic alternation in periods.

Output of operating room.—The output of the six teams, operating continuously during 24 hours, should have been 144 operations in the first 24 hours. During that period in the St. Mihiel operation, 201 patients were admitted and 170 passed through the operating room. It was surprising to see how quickly the teams fell into their stride and, after the first few hours, how smoothly the machine worked.⁴⁷

X-ray department.—The X-ray rooms were also arranged to work on the one-way traffic principle. Four teams were on duty, in alternating shifts; they found no difficulty in keeping ahead of the six surgical teams.



FIG. 37.—X-ray truck, Mobile Hospital No. 39

Sterilizing room.—Two teams worked in the sterilizing room on 12-hour shifts. One team (two men) cleaned and scrubbed instruments, while another team cleaned and repaired gloves and sharpened instruments. A nurse superintended sterilization and the storage of instruments in standard sets. Surgeons were required to use standard sets of instruments and dressings, but when needed complementary sets for lung, head, abdominal, or other operations could be called for. Dressings likewise were standardized, a certain set of dressings being provided for each operation. The system worked well and surgeons appeared satisfied with the instruments and dressings furnished.⁴⁸

During the entire period the sterilizing truck functioned perfectly. Hot air was employed for sterilizing a supply of instruments in advance, but dur-

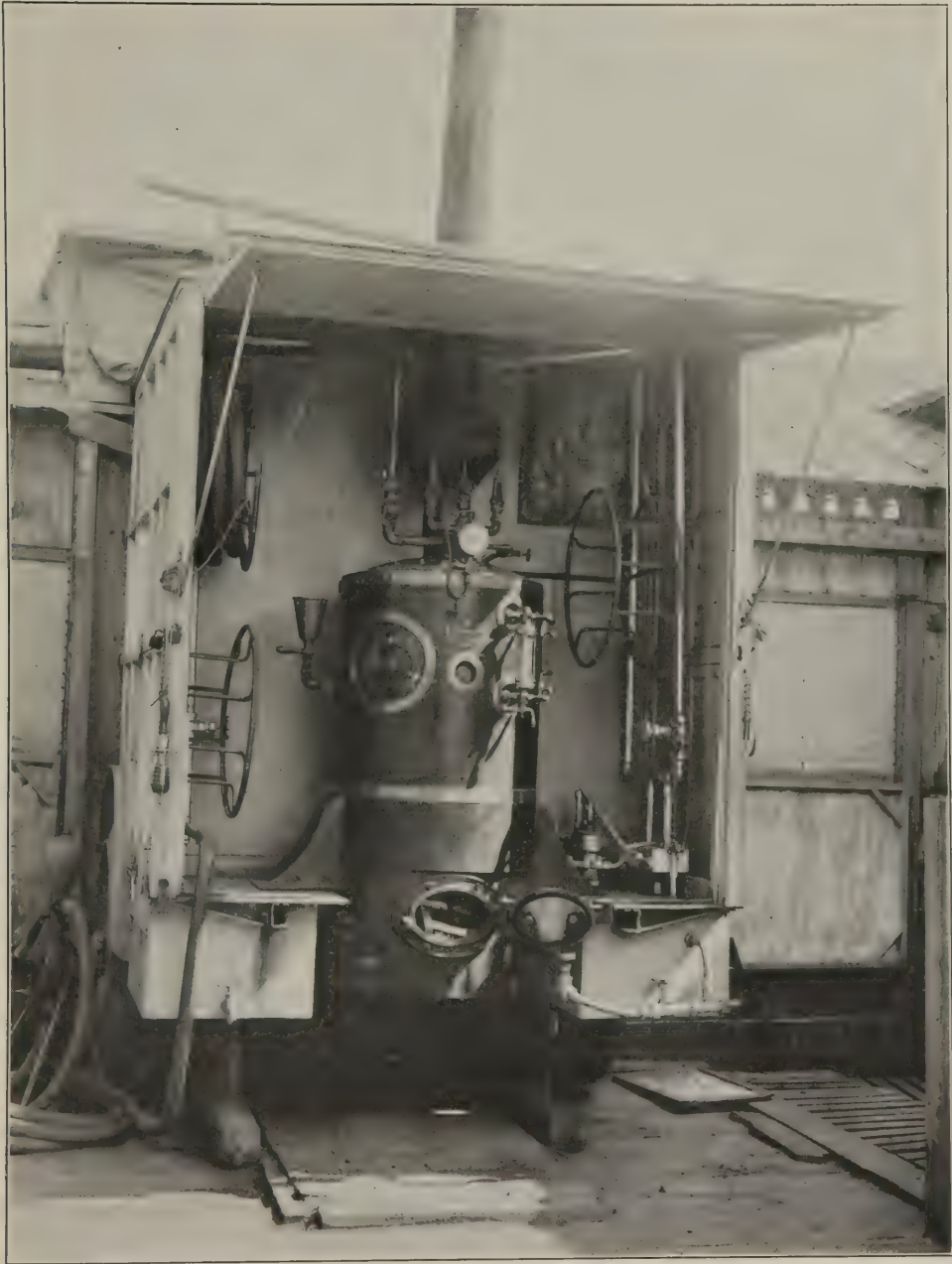


FIG. 38.—Sterilizing truck, Mobile Hospital No. 39

ing an offensive instruments usually were boiled. Tin cans of various kinds were used as containers. The sterilizer truck was managed by two teams of three men each, one for firing and two for operating the sterilizing equipment.

Bed assignment office.—When an operation was completed the orderly knocked on the door of the vestibule, and two bearers entered, removed the patient, and deposited him in the vestibule until the bed assignment was made. The bed assignment officer was stationed in the vestibule in the rear of the sterilizing rooms, between the two operating rooms.⁴⁹ Here, assignments to wards were governed by colored tags, attached to the patients by the operating teams. A white tag indicated the patient was to be immediately evacuated (after recovery from ether); brown, evacuation in 10 to 24 hours after recovery from ether; and gray, that the patient was to be retained—usually this was because of head, chest, and abdominal operations.

Ward assignments.—Wards were so assigned that each surgeon had half of a ward for transportable patients and half of a ward for nontransportable. Assignments were so made that one team would be on duty in the wards while the corresponding team was operating, thus making it possible for surgeons to follow up their cases and also making impossible the neglect of any wounded man.⁵⁰

Evacuation and consultation team.—In order to control the evacuation of patients, to check dressings, and to survey the condition of patients before their evacuation, one team was constantly detailed for work as an evacuation team. To it was also assigned the duty of consultation in any emergency which might arise in the wards in the absence of the ward surgeon. This plan was necessitated by the fact that operating surgeons also cared for ward cases.⁵¹

Evacuation.—In the evacuation ward some readjustment of cases was made necessary by delayed departure of trains. Evacuation was accomplished by ambulances and by narrow-gauge railways.⁵²

Laundry.—During part of the time the laundry operated day and night, handling 4,285 pounds of work in 44 hours. The following supplies were used during that period: Soap, 43½ pounds; soda, 168 pounds; gasoline, 22 gallons. It was estimated that 2,300 pounds of laundry could have been handled daily for any reasonable period. The plan of using pieces of muslin in the operating room instead of sheets and towels resulted in marked economy in the laundry. A full output necessitated two teams of four men each, working in 12-hour shifts, each under general charge of a sergeant.⁵³

Litter bearers.—Experience demonstrated that five different groups of bearers were necessary: (1) Four men to unload ambulances and carry patients to the bathing tables; (2) four men to carry patients to the X-ray room; (3) a supervisor and four men to handle patients in the X-ray room; (4) a supervisor and six men to remove patients from operating tables and carry them to wards; (5) eight men for evacuating patients. One supervisor and one man were required to remove soiled litters and blankets from the admission room. For a 500-bed hospital, running 6 double teams continuously, two shifts of 28 men each were required. The nature of the work was such that 8-hour periods proved better than those of 12 hours.⁵⁴

MOBILE SURGICAL UNITS (COMPLEMENTARY GROUPS)

Unfortunately, there is no individual history of a mobile surgical unit on file in the Office of the Surgeon General of the Army, nor can such a history be found elsewhere. Records of these units were obtained from divisional and other reports of Medical Department activities.

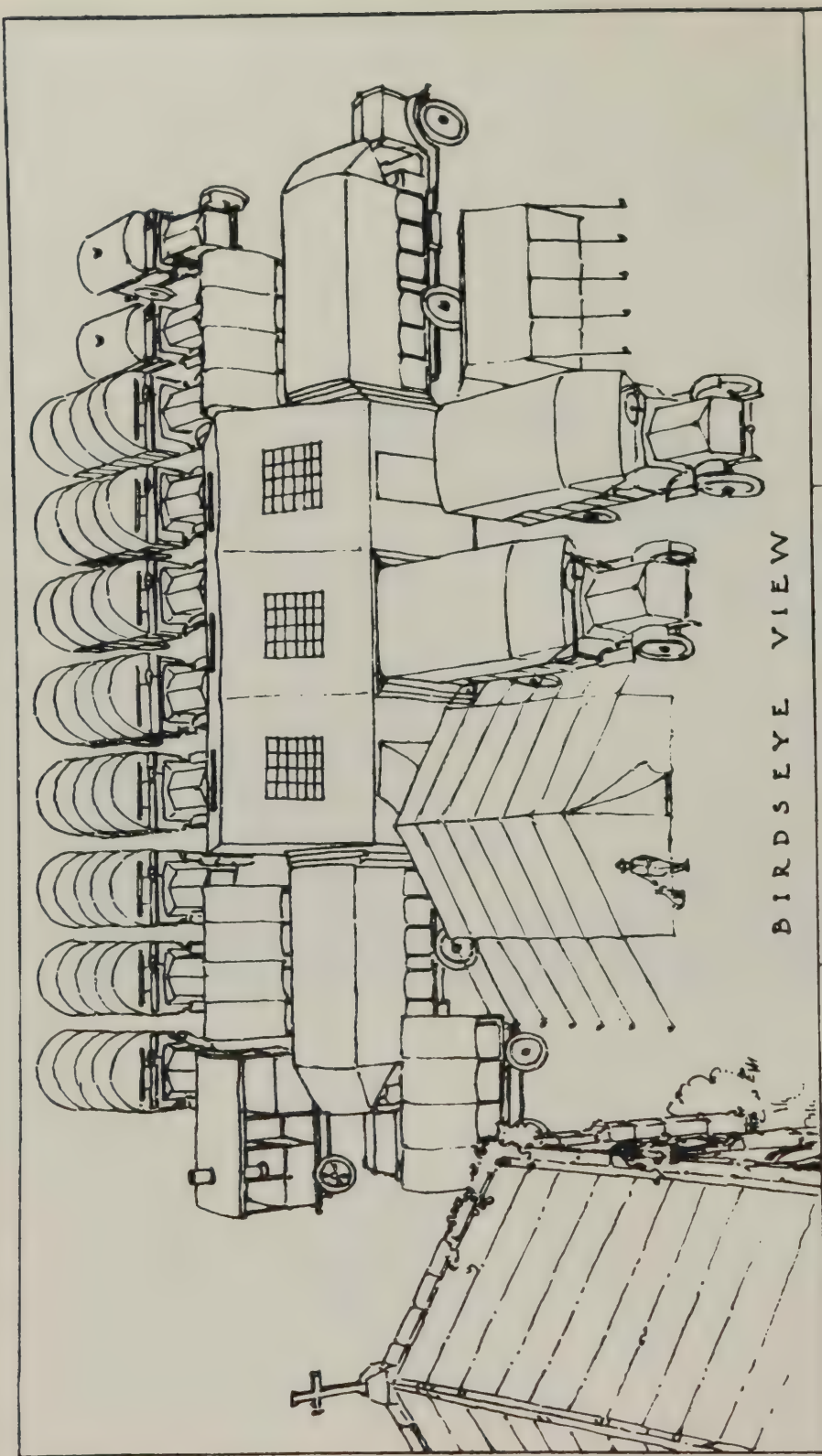
On April 22, 1918, the chief surgeon, A. E. F., cabled the Surgeon General that equipment for 20 complementary groups (later known as mobile surgical units) was being manufactured in France and requested that personnel for these units, each to consist of 1 roentgenologist, 1 sergeant, first class, 3 sergeants, and 8 privates (including 1 X-ray operator), be organized in the United



FIG. 39.—Evacuation office, Mobile Hospital No. 39

States and sent to France. Twelve such units were to be cleared in May and eight in June, 1918.⁵⁵ On November 11, as has been noted, of the 20 mobile surgical units required, the following 16 were in service: No. 1 to No. 12, inclusive, and No. 100 to No. 103, inclusive.³³

The following extract on mobile surgical units is quoted from a report of the Medical Department group of the fourth section of the general staff, G. H. Q.: "This formation enabled us to provide portable sterilizing, X-ray, and electric-lighting facilities and a small operating room for divisional, corps, and army field hospitals, thus enabling these to carry on surgical operations on nontransportable wounded."²² The Medical Department group of the fourth section, general staff, also reported that these mobile surgical units should be retained in our equipment manuals and transportation pro-



B I R D S E Y E V I E W

MOBILE OPERATING UNIT
ONE SECTION.

Drawn
R. H. S. 5 JAN 1916

Traced
R. H. S. 5 JAN 1918

Checked

General Engineer Depot, U. S. Army, Washington, D. C.

File A 525 Drg. 312

vided for them on the basis of one per division.²² Though they functioned under the army and were assigned to divisions and withdrawn from them as occasion demanded, their assignment for duty with the corps was advocated by many officers. It should be noted that nontransportable patients—that is, those for whom these units were especially designed—were usually relatively few in number, comprising only the gravely shocked, patients with abdominal wounds complicated with hemorrhage, and patients with open chest wounds. The value of the mobile surgical unit is attested not only by the above recommendation but also the Medical Department reports of many divisions.

MOBILE OPERATING UNIT NO. 1

A unique formation was Mobile Operating Unit No. 1. In August, 1917, a medical officer, who had been in charge of a hospital in France, proposed to the Surgeon General that there be provided a mobile operating unit mounted on automobile trucks and provided with a well-lighted and heated operating room, electric lighting, steam and sterilizing plants, these to be fully equipped in such a manner as to insure the best hospital conditions and at the same time capable of being erected and in action in less than an hour.⁵⁶ The following month he wrote to the War Department of an offer by Mr. George E. Turnure, of New York, of such a unit. This voluntary offer was promptly accepted by the Secretary of War.^{57,58} Shortly thereafter the medical officer in question was assigned to the Surgeon General's Office to organize the mobile operating unit.⁵⁹

The unit was provided with 64 officers, 50 nurses, and 218 enlisted men, and with equipment consisting of 5 touring cars, 5 motor cycles with side cars, 20 three-ton trucks, 20 one-half-ton trailers, and 50 Ford trucks.⁶⁰ Attached to it was one machine-shop truck unit, with a quartermaster detail of 1 officer and 25 men.⁶⁰ In its final form the unit consisted of five sections, each of which was a complete surgical hospital which could care for 40 patients and could be operated independently. Equipment of this unit was much more elaborate and complete than that of any other surgical hospital sent to France.⁶⁰ It was forwarded in sections which were concentrated in the training area at Joinville, but as the entire organization, because of the priority schedule, did not arrive until shortly before the armistice, it did not see service in battle.⁶⁰

PROFESSIONAL TEAMS

The professional services of field, mobile, evacuation, and base hospitals were all improved by the use of appropriate professional teams. These teams varied in number and in specialty. The large expansion of facilities for emergency surgical work in individual evacuation hospitals, by means of surgical teams, was imperative on account of the shortage in number of these hospitals. On June 6, 1918, we had 42 surgical teams, of which 12 were on duty with the French and 30 with base hospitals of the American Expeditionary Forces.⁶¹ Each of these teams (they were modeled on teams already organized by the



FIG. 41.—Boller car, sterilizing unit, Mobile Operating Unit No. 1

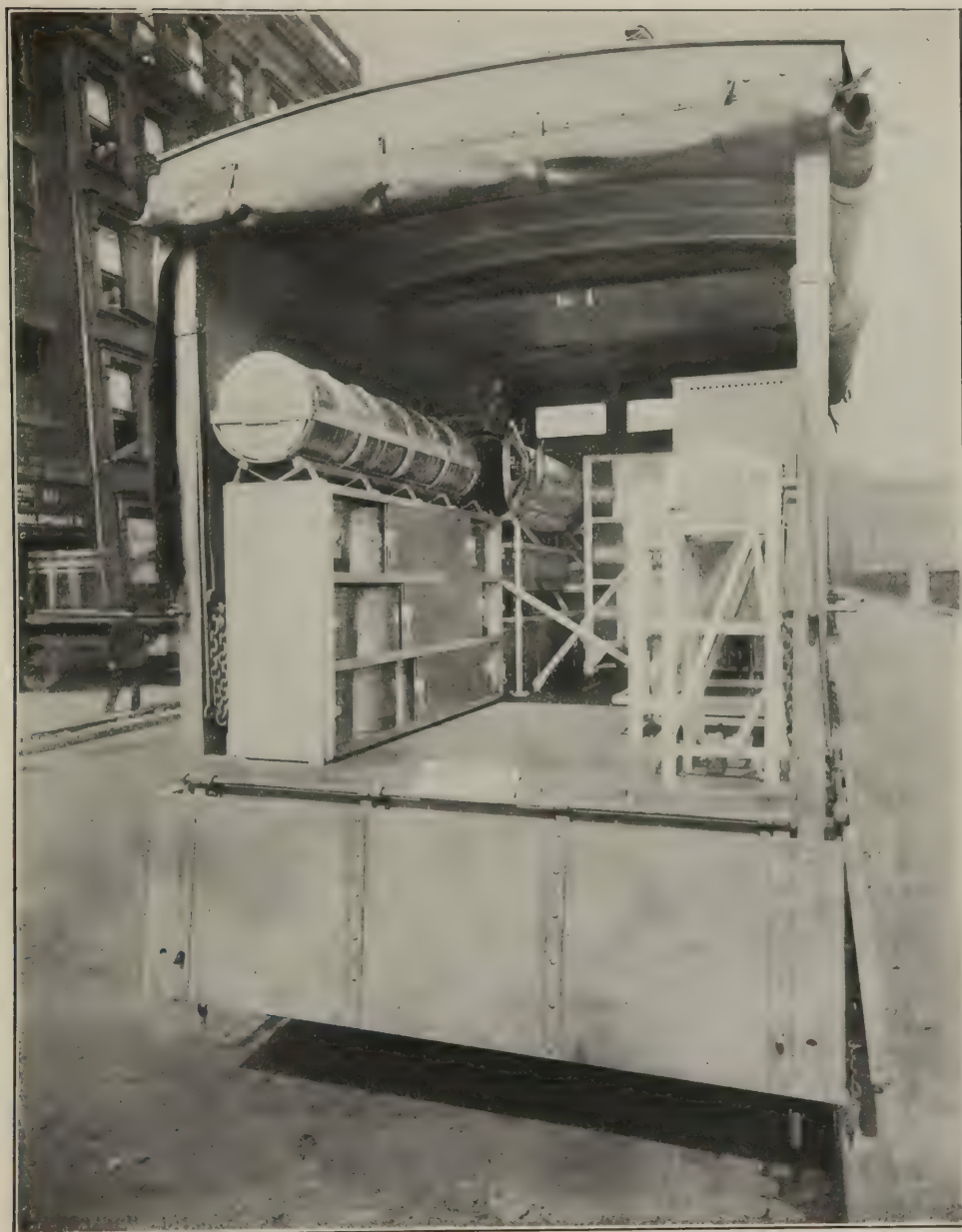


FIG. 42.—Sterilizing truck, Mobile Operating Unit No. 1

French) consisted of 1 surgeon, 1 assistant surgeon, 1 anesthetist, 2 nurses, and 2 orderlies taken ordinarily from the base hospitals.⁶¹ Following the same plan, splint and shock teams were developed later, the former to work with the operating teams and the latter as emergency medical formations.⁶¹

SURGICAL TEAMS

The director of professional services, A. E. F., issued the following letter of instructions, May 13, 1918:⁶²

1. Hereafter surgical teams will be classified as follows:
 - (a) Teams detailed from base hospitals for duty with advanced A. E. F. formations.
 - (b) Teams for duty with allied formations.
2. With reference to the formation of surgical teams available for duty with all formations, the senior medical officer of the team will forward, through his commanding officer, a report of its composition, giving full name and rank of each officer, nurse, and enlisted man, and station of each, if the team is recruited from different organizations.
3. When a team or the members of any team are detached from their permanent station, the senior medical officer will forward a report, giving date of departure, destination, and name and rank of each individual.
4. No member of a surgical team will be detached from his station without orders from competent authority, and when assigned to temporary duty elsewhere, will not absent himself from the station to which assigned nor return to his proper station without orders from the same or higher authority. Members of teams will be informed that they are not to determine when their services can be spared, and that they must await the receipt of orders.
5. No change in the composition of any team during the time it is on detached service will be made without authority, and except in cases of illness or other urgent necessity, recommendations for such changes will not be made without consultation with the chief consultant, surgery, A. E. F.
6. Medical officers and nurses on teams will, when serving with allied formations, equip themselves with sufficient funds to defray all expenses for subsistence.
7. The senior medical officer with a team will submit a monthly report of the work performed, where done, and under what circumstances. After return of the team to its proper station, he will forward a final report covering the entire period of detached service.
8. The above-mentioned reports will be forwarded in duplicate to the chief consultant, surgery, A. E. F., who will forward one copy to the director of professional services, A. E. F.
9. Operating teams should familiarize themselves with the regulations and customs of the hospitals to which they are assigned, and faithfully observe them.

That the professional staffs of evacuation hospitals must be reenforced early became apparent. This was in fact very clear by July of 1918, as only 8 such hospitals, instead of the 52 authorized by Tables of Organization, had then arrived in France.⁶¹ The situation could be met only by enlarging the evacuation hospitals which were available by assigning to them personnel drawn from other sources. So, plans were at once made to increase the number of surgical teams, and, in addition, to organize casual surgical teams. A casual surgical team had the same personnel as a surgical team except that it had one nurse and one orderly.⁶¹

The total number of teams organized by the professional services were shown as follows in a table submitted December 31, 1918:⁶¹

	Teams	Personnel
Surgical:		
From base hospitals..	244	1,708
Casual.....	95	475
Splint.....	30	90
Shock.....	78	390
Total.....	447	2,663

The brunt of the work was borne by less than 200 of these teams.⁶¹

GAS TEAMS

Organization of gas teams at base hospitals was authorized by the chief surgeon, A. E. F., by an endorsement to the director of professional services dated June 2, 1918.⁶³ The chief consultant in medicine previously had expressed the desire to have two gas teams organized in each base hospital which could be called on for service elsewhere as desired. Such teams were formed in several base hospitals (e. g., Base Hospital No. 8, Base Hospital No. 27). Each of these teams consisted of 1 officer, 2 nurses, and 2 enlisted men. A course of degassing instruction at the central laboratory at Dijon was provided for officers designated to perform degassing service.⁶³ Their attendance was contingent, however, on the possibility of releasing them from other duties for the time being.

MISCELLANEOUS TEAMS

In various hospitals teams other than those mentioned were organized from local sources. Thus the field hospital which cared for nontransportable wounded would organize surgical teams, sometimes from its own personnel and sometimes from selected personnel assigned to it from other organizations of the divisional sanitary train. Surgical hospitals generally, whether divisional or army, organized teams from their own personnel. In some of these units two dressing teams to dress the slightly wounded and to assist in the operating room were organized, replacing each other every eight hours.

Similarly, two shock teams were organized in each hospital, composed of an officer, 1 or (usually) 2 nurses, and 1 or (usually) 2 orderlies. The officers had received an intensive course of instruction in the central laboratory at Dijon, where they had attended lectures on traumatic shock and its treatment by heat, transfusions of blood, by gum solution, and kindred matters, and had learned the use of instruments of precision by which they checked the shocked patient's condition and response to treatment.¹³ It was essential that these officers be highly trained, for the lives of many patients admitted to their department were often in the balance.

A number of evacuation hospitals organized two orthopedic or splint teams, each consisting of one specially trained officer and two enlisted men whose duty it was to maintain a supply of splints in the operating room and

other parts of the hospital and to apply them after operation. These teams operated in 12-hour shifts, and were of great benefit to the operating surgeons not only by applying splints for them, but by preventing breaks in asepsis on their part.²¹ They supervised the distribution and use of splints in other parts of the hospital as well as in the operating room, reapplying them in the wards or supervising their application there, and maintained at the receiving ward an exchange for splints with ambulance orderlies, replacing those which had been brought in on patients.

One or, if at all possible, two radiologic teams were made up from the permanent personnel of the hospital. These teams consisted of one officer skilled in radiology, fluoroscopy, and screen technique, and one or two orderlies. It was found essential that these teams be composed of young men, because of the long hours that they had to be on duty.²¹

Despite the shortage in personnel and the pressure under which all had to labor at times, it proved very desirable, in fact almost imperative, that alternating teams for shock, splinting, and radiology be provided, as well as alternating surgical teams. Usually the shock, splint, and radiologic teams operated in 12-hour shifts.²¹

Specialists in the eye, ear, nose, and throat and dental surgeons operated under the supervision of the chief of surgery.

It was found that there should be available at least two surgeons proficient in operations on the brain and eye.²¹

If the hospital received gassed patients, degassing teams (usually three men) were organized under the chief of the medical service though under the direct supervision of another officer.

The laboratory officer, selected from the permanent personnel, was one well versed in wound bacteriology and in pathology. As a rule, this officer had taken the prescribed course in wound bacteriology in the central laboratory at Dijon, his place being filled temporarily at the time by some other officer already qualified. The laboratory officer not only performed routine bacteriological examinations and made smears from wounds to insure their control, but he also prepared Dakin's solution, made post-mortem examinations, and collected specimens of pathological material for the Army Medical Museum. In some hospitals the laboratory, pharmacy, and dental departments were located in the same tent, but in others their location was somewhat different.²¹

In all gas hospitals degassing teams were organized. This tendency to work by means of more or less permanent teams was remarked also in the hospitals in other directions than in the purely professional services, for a number organized definite groups, such as those for the receiving and evacuating departments, which served as teams in rotation, each of whose members was given specific duties.

CONVALESCENT DEPOTS

It was found that, in the height of an offensive, particularly if it was prolonged, many patients with slight illness or injury who would soon have

been fit for return to duty were sent to the evacuation hospitals; and then as these hospitals needed their beds for the casualties which were constantly arriving, they were obliged to send the slightly sick and injured to the rear. This practice not only burdened the railway rolling stock and the base hospitals, but also lost these men to their divisions for several weeks. In order to meet this situation, attempts were made to provide army and corps convalescent depots, and only on account of the lack of medical personnel was a convalescent depot for the First Army not completed at the time the armistice was signed.⁶⁴ The establishment of this depot, which was located at Revigny, was then well under way.⁶⁴ At this time, for the Second Army, the barracks at Toul were available for hospital purposes and this, plus the fact that its casualties were comparatively small in numbers, made the need for such a depot less urgent in it than in the First Army. By the time of the armistice the several corps, especially the First Corps, were caring for slightly incapacitated patients in field hospitals of the corps train set apart for this purpose, designating and employing them as convalescent depots.⁶⁵

EVACUATION AMBULANCE COMPANIES

In the edition of the Manual for the Medical Department, issued in 1916, the designation of the then so-called transport column, which had been authorized in 1910, was changed to the evacuation ambulance company, and provision was made that its personnel and equipment would be those of an ambulance company with such modifications as the conditions of its particular service warranted, specifying that "motor ambulances should if practicable be substituted for horse-drawn vehicles." It was further provided that when a battle was imminent the number of vehicles and bearers should be increased by the officer in charge of the advance section. The primary duty of these units was to clear the field hospitals and to transport patients to evacuation, base or other hospitals or to points with rail or boat connections. They also were to transport wounded on occasion from dressing stations, stations for slightly wounded, and from other places in the field.

In November, 1917, the Surgeon General wrote the chief surgeon, A. E. F., 3 evacuation ambulance companies were being organized at home, each consisting of 2 officers and 60 enlisted men, that it was hoped to have 1 such unit with each division, and that the equipment would be that of a motor ambulance company with 12 ambulances less dressing station equipment.⁶⁶ He requested recommendations. The chief surgeon, A. E. F., replied, advocating 20 ambulances per ambulance company instead of 12.⁶⁷ The Surgeon General ordered the commanding officers, Medical Officers' Training Camps at Fort Riley and at Fort Oglethorpe to organize the companies in question, one at the former and two at the latter.⁶⁸

In the meantime, the chief surgeon, line of communications, had recommended (November 27, 1917) that ambulance personnel and transport within his jurisdiction be organized into evacuation ambulance companies, each consisting of 5 sections with 20 ambulances each.⁶⁹ He also urged that, if it were possible, 30 sections of the United States Army Ambulance Service, then in

the United States but ready for shipment, be secured for the A. E. F., in order to avoid the complete breakdown in transport which he considered imminent. He remarked that the need of evacuation ambulance companies was becoming more and more apparent, both to the transportation department of the chief surgeon's office and to the hospitalization department, General Headquarters. The need for motor ambulance companies, conveniently located to meet current needs, instead of individual ambulances distributed among many combat and other organizations and the special need for such a unit (under the control of the advance section, Services of Supply) in the vicinity of the training areas were emphasized. Other companies as required would be located at other places in the line of communications. It was anticipated that personnel and matériel might ultimately be supplied for the evacuation ambulance companies from the sections of the United States Army Ambulance Service which had been assembled, but that until that service's resources were more than enough to meet its own needs, our evacuation ambulance companies might be developed quickly though temporarily by drawing in from various base and other hospitals all available transport and personnel. It was believed that even though this organization would lack symmetry it would meet the situation temporarily until units of the United States Army Ambulance Service could be made available. The memorandum further remarked that 88 sections of that service in the United States, not yet assigned, might be considered available for requisition for service on the line of communications. The necessity for a maintenance department with ample spare parts and other equipment was noted as was also that for the immediate establishment of an ambulance park in the vicinity of the training areas.

The same date (November 27, 1917) the chief surgeon, A. E. F., cabled the Surgeon General that evacuation ambulance companies should be organized from the equipment and personnel of sections of the United States Army Ambulance Service.⁷⁰

Under date of December 8, 1917, in a memorandum for the Surgeon General, the chief surgeon, A. E. F., emphasized the need for organizing on a large scale transportation for casualties, noted the limited amount of transport and inadequate ambulance spare parts available at camp and base hospitals; and to establish a precedent, requested that the chief of United States Army Ambulance Service loan the United States Army one ambulance company section. He further requested that The Adjutant General authorize necessary transport or its purchase.⁷¹ A few days later (December 13) the chief surgeon, A. E. F., received a report from one of his subordinates who had been ordered to investigate transportation requirements, in which emphasis was laid upon the need for evacuation ambulance companies; the wasteful results of assigning ambulances to small scattered commands; the difficulty of making evacuations in training areas, and suggesting number and locations of companies, sources of personnel and matériel, facilities for repairs, etc.⁷²

On December 18, 1917, the Surgeon General notified the commanding officers of the home training camps above mentioned that the personnel of an

evacuation ambulance company would be 1 lieutenant, Medical Corps, 3 non-commissioned officers, and 34 privates.⁷³ On December 28, 1917, the War Department formally prescribed this personnel and authorized the organization of 20 such companies with 12 G. M. C. ambulances each.⁷⁴

On January 14, 1918, the chief surgeon, line of communications, reported that it was imperatively necessary to make provision for more motor ambulance transport in that area in order to evacuate the field hospitals, and recommended that a provisional motor ambulance company be organized from the resources (116th Sanitary Train) of the 41st Division (the First Depot Division).⁷⁵ The organization he recommended was that mentioned above in the letter from the Surgeon General dated November 12. This recommendation was approved and the organization of this provisional company was ordered January 17, 1918.⁷⁶ This unit first designated the 116th Evacuation Ambulance Company, and later Provisional Evacuation Ambulance Company No. 1 was the first evacuation ambulance company of the American Expeditionary Forces. It was located at Toul.

On January 30, 1918, the Surgeon General initiated with The Adjutant General the following correspondence:⁷⁷

1. In cable from the commanding general, American Expeditionary Forces, No. 322, par. 3, subpar. A, it was stated that it was the unanimous opinion that evacuation ambulance companies be organized with the equipment and personnel of the sections of the U. S. Army Ambulance Service. This request was referred to again in a letter from the chief surgeon, A. E. F., written December 24.

2. In cable No. 486, par. 8, from the commanding general, A. E. F., the recommendation was made that the remaining 73 sections, U. S. Army Ambulance Service, be used in organizing the ambulance companies of the Army sanitary train, item M 201, and evacuation ambulance companies, M 406, and that the remainder be drawn on all ambulance personnel for replacement draft according to par. 4, cablegram 318.

3. The sections of the American Ambulance Service referred to are those now mobilized at Allentown, Pennsylvania.

4. It is the understanding in this office that when these sections were organized they were intended for service with the French Army, and they have heretofore been used for that purpose.

5. A decision is requested as to whether these sections could be used for the purpose indicated in General Pershing's cables.

6. It is to be noted that in some cases the officers attached to these sections are not medical officers. Also that they are equipped and have been trained with Ford ambulances, and that the ambulances provided for the ambulance companies of the Army are G. M. C.'s. Should the use of these sections be allowed, the personnel will differ from that as authorized for evacuation ambulance companies in the second indorsement of The Adjutant General's Office, dated December 28, par. 3, subpar. 8.

[1st ind.]

To the Chief of Staff.

A. G. O., February 1, 1918.

[2d ind.]

WAR DEPARTMENT, A. G. O., March 12, 1918.

322.35 (Misc. Div.)

To the SURGEON GENERAL OF THE ARMY:

There is no objection to the use of the enlisted personnel of the American Ambulance Service now at Allentown, Pennsylvania, organized under section 2, General Orders, No. 75, War Department, June 23, 1917, as amended by section 1, General Orders, No. 124, War Department, September 20, 1917, for any purpose for which the enlisted personnel

of the Medical Department may be used. The commissioned personnel may be used in a like manner, except that those officers who are not doctors of medicine will be assigned to such duties as their technical training permits. It is, however, to be understood that this authorization in so far as it relates to these officers is not to be construed as in any way modifying the provisions of paragraph 3, Manual for the Medical Department, 1916, which prescribes that: "An applicant for appointment in the Medical Corps of the Army * * * must be a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine," and as fast as these officers are separated from the service their places will be filled by the appointment of medical officers.

By order of the Secretary of War:

The chief surgeon, A. E. F., on March 5, 1918, in an estimate of the total Medical Department transportation needed for the American Expeditionary Forces, included 1 evacuation ambulance company for each division, the transportation of each such unit to be 1 motor car, 1 motor cycle with side car, 20 motor ambulances, and 2 motor trucks.⁷⁸

The 22d of the same month, the Surgeon General wrote The Adjutant General, United States Army, as follows:⁷⁹

1. Subparagraph "H," paragraph 3, of 2d indorsement, Adjutant General's Office, December 28, 1917 (322.3 Medical Department, Misc. Div.), gives the personnel of evacuation ambulance companies as 1 lieutenant, Medical Corps, 3 noncommissioned officers, 34 privates.

2. It is requested that this be amended to read as follows: 1 captain or lieutenant, Medical Corps; 3 noncommissioned officers; 3 mechanics; 2 cooks; 24 wagoners; 5 privates, first class, and privates.

3. In General Pershing's organization project for evacuation ambulance companies all transportation is motorized and consists of 20 motor ambulances, 1 touring car, 1 motor cycle with side car, 2 motor trucks.

4. The unit is liable to expansion by the addition of other ambulances.

5. The 2 cooks for the organization are necessary; the 3 mechanics are required to keep the motor transportation in proper order, and the 24 wagoners are the chauffeurs.

This request was granted in the following terms:

[1st ind.]

A. G. O., *March 26, 1918.*

To the Chief of Staff (R. A. H.).

[2d ind.]

WAR DEPARTMENT, A. G. O., *April 15, 1918.*

To the SURGEON GENERAL OF THE ARMY.

Returned.

The following personnel for evacuation ambulance companies has been approved: 1 captain or lieutenant, Medical Corps; 3 noncommissioned officers; 3 mechanics; 2 cooks; 23 wagoners; 6 privates, first class, and privates.

This authorization must not be construed to change the numbers or grades of medical officers provided for the Medical Department in W. P. D. 9199-25, approved February 4, 1918.

By order of the Secretary of War.

On September 26, 1918, the chief surgeon, A. E. F., recommended to the chief of staff, General Headquarters, the issuance of a general order, which he had prepared, concerning the operation of ambulances in the Services of Supply.⁸⁰ This, in brief, was to provide that all ambulances in that territory be assigned to 18 definite evacuation ambulance companies, with the enlisted personnel then assigned to duty with these vehicles. The personnel of each

unit, it was recommended, should be 2 officers (captains or first lieutenants, Medical Department), 2 sergeants, first class, 4 sergeants, 23 wagoners, 1 cook, 1 mechanic, 20 privates, first class, and 5 privates. The units were to be equipped with 20 ambulances or more, 1 motor cycle with side car, and such temporary additional machines and personnel as might be necessary; and the vehicles, so far as possible, were to be garaged at hospital centers, base hospitals, camp hospitals, and other camps where they were used, but at all times would be under the orders of the commanding officers of the respective companies. A list showed that from 9 to 22 ambulances were garaged at the more important localities in the Services of Supply. In support of this proposed arrangement the chief surgeon, A. E. F., urged that this organization would promote service by the pooling of ambulances, and would provide units which, in emergency, could be sent to the Zone of the Advance. To these recommendations the chief of staff replied that, as the assignment of ambulances was under the jurisdiction of the chief surgeon, it was believed that they could be distributed by him as required for the purpose mentioned; and further that.⁸¹

If it is desired to organize evacuation ambulance companies, a cablegram should be prepared outlining how many can be organized in the A. E. F., and requesting that numbers be assigned for the units. Upon receipt of reply authority will be granted for the formation of the companies under approved tables of organization.

A total of 82 evacuation ambulance companies (including Provisional Ambulance Company No. 1) saw service in the American Expeditionary Forces. Twenty-one arrived before the armistice and sixty-one after the armistice. Twelve of those which arrived after the armistice were disbanded and their personnel reassigned in Base Section No. 2.⁸⁴

Those which served overseas before the armistice, November 11, were the following:⁸⁴

Provisional Ambulance Company No. 1, organized, as above described, from the 116th Sanitary Train of the 41st Division, which arrived December 31, 1917. Located at Toul.

Evacuation Ambulance Company No. 1 arrived May, 1918. Attached to 26th Division October, 1918. In November it was at Rochefort.

Company No. 2 arrived May 30, 1918. Paris during August, September, and October, 1918; at Fromereville, Meuse, during November. Transported 69,925 patients, including those moved more than once.

Company No. 3 arrived April 22, 1918. At Staden, Belgium, October, November, December.

Company No. 4 arrived May 5, 1918. Attached to 89th Division until September, 1918. At Royameix, Meurthe-et-Moselle, September; Commercy, Meuse, October; Mars-la-Tour, Meurthe-et-Moselle, November to March.

Company No. 5 arrived July 19, 1918. With First Army, August, September, October, and November. Assigned to different hospitals at different times in clearing field and evacuation and mobile hospitals. Army troops in St. Mihiel, cleared field hospital and served 10th French Army at Chateau-Thierry. Moved into Germany. Transported 10,332 patients, not including 3,000 in Germany.

Company No. 6 arrived July 19, 1918. At Vaux-les-Palameix, Meuse, September and October; Virten, Belgium, November.

Company No. 7 arrived July 19, 1918. With Second Army. Served with Evacuation Hospital No. 3 in Marne area and with Justice group, Toul, evacuating the hospital to railhead; answered emergency calls and here operated the motor transport park for the hospital group; participated in the offensive against Mont Blanc east of Rheims by the 2d and 38th Divisions. It worked between the dressing station and the hospitals. Then assigned to Evacuation Hospital No. 15, near Verdun.

Company No. 8 arrived July 19, 1918. At Rimaucourt, Haute Marne, until ordered to proceed to Le Mans.

Company No. 9 arrived September 14, 1918. Operated at St. Nazaire, Base Section 1. Detained there until ambulances were received; that is, until after the armistice. On November 25 Ambulance Company No. 144, with 121 men, and Evacuation Ambulance Company No. 9, with 37 men, were organized into an evacuation ambulance battalion which evacuated hospital trains to the transport and moved sick and wounded in and out of hospitals. The battalion moved 80,000 patients by July.

Company No. 10 arrived August 12, 1918. At Froidos, Meuse, September, October, and November.

Company No. 11 arrived August 13, 1918. At Camp 1, Base Section 1, August to January, 1919.

Company No. 12 arrived August 13, 1918. At Vaubecourt, Meuse, October to December.

Company No. 13 arrived September 9, 1918. At St. Nazaire, September and October.

Company No. 14 arrived September 3, 1918. At St. Nazaire, September and October. Then at Bordeaux.

Company No. 15 arrived September 18, 1918. Camp Capelette, Base Section No. 6, October. Reception park, Base Section 6, November and December.

Company No. 16 arrived September 18, 1918. At Camp Capelette, Base Section 6, October; motor reception park, Base Section 6, November. Never received ambulance equipment nor moved patients. Operated as a motor transport unit and assembled cars.

Company No. 17 arrived October 13, 1918. Brest motor ambulance pool formed December 28, including this unit.

Company No. 18 arrived October 8, 1918; on October 12 assisted in assembly of carts, trucks, and ambulances at Bordeaux.

Company No. 19 arrived October 12, 1918. At St. Nazaire, October; Bordeaux, November.

Company No. 20 arrived October 12, 1918. At Bordeaux, October and November.

The rest of the evacuation ambulance companies were employed at base sections, hospital centers, and with the Army of Occupation.

MOBILE LABORATORIES

Prior to the World War, our Medical Department had no mobile laboratories. Yet, as may be seen in the Appendix, p. 1044, provisions had been made so that laboratory work might be accomplished in the theater of operations, though only in the line of communications.⁸² That is to say, the organization of the Medical Department in war, as outlined in the last pre-war edition of the Manual for the Medical Department, provided for field laboratories and for the equipment of evacuation and base hospitals with laboratory facilities. As regards the field laboratory, it was intended to be a relatively fixed institution, conveniently located somewhere on the line of communications; and as regards the laboratories of evacuation and base hospitals, they were mobile, but only to the extent of the mobility of their parent organizations.

The arrangement thus outlined necessitated that all laboratory work required in the zone of the advance be accomplished in the line of communications.

In the summer of 1917, when the chief surgeon, A. E. F., was formulating his plans for the Medical Department of the American Expeditionary Forces, he appreciated the necessity for laboratories which could be made a part of the organization of the Medical Department attached to the combatant forces. On August 12, 1917, he forwarded to the Surgeon General an outline of the tentative organization for the laboratory service of the American Expeditionary Forces.⁸³ This outline provided, on the basis of five corps of six divisions each, for stationary army and corps laboratories, and for mobile field laboratories staffed by two officers and four men each for every division. It was planned that the principal work of the division mobile laboratory would be the chemical and bacteriological examination of water supplies, the examination of smears, and the securing of cultures for examination in the laboratories of the corps or army. It was further planned to include in the work of the mobile laboratory all necessary chemical analyses.

One week after the chief surgeon, A. E. F., forwarded to the Surgeon General his tentative plan for the laboratory service overseas, he initiated plans for securing equipment for mobile laboratory units. On August 19, 1917, he placed an order with a British firm for two "motor bacteriological laboratories," each to consist of a small but well-equipped outfit mounted on a 3-ton chassis.⁸⁴ However, delivery of these laboratories was delayed until early in the following year because of the difficulty experienced in securing from the British Government a release of the chassis for them.⁸⁵

On January 11, 1918, the director of laboratories, A. E. F., submitted to the chief surgeon, A. E. F., an elaborated plan, which had already been approved in principle by the chief surgeon, for the organization of the division of laboratories and infectious diseases.⁸⁶ This plan is given in full in Volume II of this history and will not be reproduced here. It is sufficient, for present purposes, to state that it contemplated two classes of laboratory equipment for service in the zone of the armies, immobilized and portable. The immobilized (army laboratory) equipment was for installation in permanent buildings in the zone of the advance, or in the advance section. The portable equipment

was of two classes: Equipment installed in a specially constructed motor vehicle (mobile laboratory) and that packed in standardized chests (portable equipment). The mobile laboratories were designated corps laboratories and were given serial numbers. However, these mobile laboratories were not assigned definitely to corps but were attached to armies, corps, and to other units as demands for them arose. The portable equipment, in contradistinction to the mobile laboratory, being packed in standardized chests could be readily transported in any kind of vehicle. This was the equipment that was assigned for the laboratory work of a division; it was adequate for such routine work, including bacteriological and chemical examinations of water supplies. The personnel was 2 medical officers, 1 officer of the Sanitary Corps, and 4 enlisted men.

On January 14, 1918, the director of laboratories reported to the chief surgeon, A. E. F., that plans for the newly adopted portable equipment for the laboratories of divisions, mentioned in the preceding paragraph, had been completed, and that a model was being constructed at the Pasteur Institute, Paris.⁸⁷

On May 22, 1918, the two types of transportable laboratories which had received consideration were available and in use.⁸⁸ As previously indicated, one of these was a bacteriological motor car, the other a set of chests which could be transported on trucks. It was found the British utilized the former because of the assurance that the laboratory transportation was thereby provided, the French the latter because of its greater convenience. Our division of laboratories now decided that the former equipment had several disadvantages, viz, its initial cost was much greater (\$7,500 as contrasted with \$4,400), it was constructed by one firm only; its equipment was not flexible; and its operation was dependent on the proper functioning of other parts of a special vehicle, for example, the motor.⁸⁸ It was reported that the French had given up the use of the bacteriological motor cars in favor of transportable laboratories packed in chests.⁸⁸ After a thorough investigation, the division of laboratories adopted the transportable laboratory in chests, but it was also decided that for different units of this character different sets of chests would be employed. Thus an army laboratory would be issued in eight chests, a division laboratory in three. The transportation required would be either a $\frac{3}{4}$ -ton or a $1\frac{1}{2}$ -ton truck, according to the number of chests.⁸⁸

On July 7, 1918, in Memorandum No. 5, published by the Division of Laboratories and Infectious Diseases, the personnel, transportation, and duties of the divisional laboratory unit were discussed in some detail. The provisions of this circular were later republished, somewhat amplified, in Memorandum No. 7 from the same office under date of August 14, the revised document reading as follows:⁸⁹

1. In the organization of the laboratory service for the American Expeditionary Forces provision was made for a divisional laboratory unit to serve with each division.

The personnel, equipment, and proposed transportation for each unit is as follows:
Personnel:

- 1 captain or first lieutenant, Medical Corps or Medical Reserve Corps.
- 1 captain or first lieutenant, Sanitary Corps, Medical Department.
- 4 enlisted men, Medical Department.

Equipment:

Chest 1, standard equipment for clinical pathology.

Chest 2, standard equipment for clinical pathology.

Chest 3, standard bacteriological incubator.

Transportation:

1 light truck ($\frac{3}{4}$ -ton Ford or other standard).

1 motor cycle with side car.

2. It is contemplated that these laboratory units shall constitute a part of the sanitary staff of the division surgeon and that they will be used by the divisional sanitary inspector in the investigation and control of communicable diseases and in the inspection, supervision, and control of sterilization of water supplies. While the question of immediate control of these units is a matter of internal administration, it is deemed advisable to place the medical officer in charge of the divisional laboratories because of the relative importance of the fields covered by the members of these units.

Some division surgeons have found it most practicable to attach the laboratory unit to the divisional sanitary train. When in divisional training or rest areas it is contemplated that the laboratory unit will be attached to the camp hospital functioning for the division. At the front it is attached to an immobilized field hospital, preferably the one through which infectious diseases and medical cases are evacuated.

3. To properly perform its functions it is contemplated that the medical officer and officer of the Sanitary Corps attached to this unit shall, on arrival in France, be sent to the central Medical Department laboratory for temporary duty for a brief course of instruction in the epidemiology of communicable disease and supervision of water supplies, respectively, and to obtain their laboratory equipment. Further practical instruction will be given these officers by specially trained officers of the infectious diseases and water supply sections of this office, who will visit them from time to time for the purpose of giving aid in the solution of local problems.

4. When an epidemic disease prevails in a division in such proportions as to make it seem desirable to temporarily reinforce the divisional personnel and to have special epidemiological and laboratory studies made for the control of the disease, the division surgeon is authorized by Bulletin No. 32, General Headquarters, American Expeditionary Forces, to communicate directly with the director of laboratories and infectious diseases, who will dispatch special personnel and mobile equipment to reinforce the divisional authorities in controlling the epidemic. In the zone of the advance these units are usually located in close proximity to evacuation and mobile hospitals. These organizations are provided with a complete laboratory equipment, which is available for use by the members of the divisional laboratory units when highly technical laboratory examinations are required.

Many of the evacuation and mobile hospital laboratories are prepared to do Wassermann tests, and the officer in charge of the divisional laboratories should consult with the laboratory staff of the organization to determine whether demands for such examinations can be met. (See revised Memorandum No. 0, this office.)

5. The equipment to be supplied the divisional laboratory unit has been standardized and arranged in chests in order that it may be packed and moved at a moment's notice.

Chest 1 (weight 230 pounds, dimensions 24 by 24 by 36 inches) ;

Chest 2 (weight 140 pounds, dimensions 21 by 24 by 30 inches) ;

Chest 3 (weight 180 pounds, dimensions 30 by 22 by 28 inches) ;

constitute the divisional laboratory equipment. Chests 1 and 2 contain the equipment and supplies for routine clinical pathology, while chest 3 contains a bacteriological incubator complete, arranged for heating with coal oil. The coal oil is to be secured from the divisional supply officer.

6. With the equipment mentioned above the following classes of work can be done:

Sputum: Microscopic examinations of smears for the tubercle, pneumococcus, influenza, and animal parasites.

Urine: Appearance, color, odor, reaction, specific gravity, and qualitative tests for albumin, sugar, acetone, and diacetic acid. Microscopic examinations of urinary sediments. In suspected cases of typhoid fever about 10 c. c. of the urine should be sent to the central Medical Department laboratory of the nearest base or army laboratory in a bottle of bile medium, for isolation of the suspected microorganism.

Venereal lesions: Microscopical examinations of smears for gonococci and Fontana stained preparations from venereal sores for spirochetes.

Blood: Hemoglobin estimations (Tallquist), leucocyte counts, red-cell counts, and differential leucocyte counts. Microscopical examinations of stained preparations for pathological changes, plasmodia, etc. In every case of undetermined fever of over 48 hours' duration, 2 to 5 c. c. of blood should be collected in a bottle of bile medium and the culture sent to the central Medical Department laboratory or nearest base or army laboratory for further study. Sera for agglutination tests, the Wassermann test, etc., should be collected in the serum capsules furnished with this equipment and sent to the nearest of the laboratories mentioned above.

Feces: Microscopical examinations of fresh specimens for parasites, ova, blood, mucus, and pus cells.

In suspected cases of typhoid fever, paratyphoid fever, or dysentery, about a gram of the feces should be sent to the central Medical Department laboratory, or the nearest base or army laboratory, in a bottle of bile medium, for insolation of the specific microorganism.

Transudates and exudates: Microscopical examinations of stained specimens for tubercle bacilli, gonococci, spirochetes, etc., and cytological changes.

Spinal fluid: Microscopical examinations (cytologic and bacteriologic).

7. It is not intended that highly technical bacteriological and serological work shall be done by these units. In epidemics requiring epidemiological study and laboratory control, it is contemplated as noted in paragraph 3, above, that special personnel and mobile equipment will be sent to reinforce the local authorities on request from the division surgeon.

8. It is not contemplated that the Sanitary Corps officer attached to this unit for supervision of water supplies shall do any extensive chemical or bacteriological work. In so far as his water work is concerned, usually it will be confined to sanitary surveys of sources of supply, recommendations concerning quality of water, and supervision and instruction of sanitary detachments in the detail of the sterilization of water by chlorination or otherwise. His work will be done under the supervision of the divisional sanitary inspector. Where bacteriological or chemical analyses are deemed advisable, the specimens will be collected by the water supply officer of the laboratory unit and forwarded to the nearest army or base laboratory or mobile water laboratory. A chlorine testing outfit for use in controlling the chlorination of water supplies will be issued to divisional laboratory units. When extensive surveys requiring laboratory control are necessary, the Medical Department representative on the staff of the water supply officer for the army, will be called on for assistance. He has under his control mobile water analysis laboratories designed to carry out such investigations.

* * * * *

12. At the present time no transportation is provided for these units in tables of organization, and request had been made that one motor cycle with side car and one light truck ($\frac{3}{4}$ -ton Ford or other standard) be included in the revised tables of organization for this unit. This request has not as yet been approved.

Circular No. 40 of the chief surgeon's office, A. E. F., published July 20, 1918, provided that the laboratories of the American Expeditionary Forces would be of two general types, stationary and transportable, the latter to serve evacuation and mobile hospitals and divisions. It was directed that equipment of the transportable laboratories consist of standardized expendable units in chests and that their personnel be especially trained for the duties they were

to perform. This training was accomplished by sending newly arrived personnel to the central laboratory at Dijon and there giving them an intensive course of instruction.

On September 19 the Surgeon General informed the chief surgeon, A. E. F., that it was desirable that the mobile laboratories be numbered and allotted to the chief surgeon, numbers from 1 to 45, inclusive, for such of these formations as were already overseas or en route.⁹⁰ Records of the Surgeon General's Office at that time showed that mobile laboratories had been sent to France with 31 divisions but had not accompanied 6 others.⁹¹ The director of laboratories stated in reference to this that, in point of fact, many of these units had not actually accompanied their divisions from the United States; that some had come after them; and that, in some instances, it had been necessary for the director of laboratories to find personnel in the American Expeditionary Forces who could be trained and assigned to their service. In view of the signing of the armistice the proposed numbering of the mobile laboratories never became effective.

In his report for the week ending October 28, 1918, the director of laboratories reported to the chief surgeon, A. E. F., in part as follows:⁹¹

(a) Additional transportable laboratory equipment arrived relieving acute shortage in this equipment. Sufficient number of those units now on hand to meet the requirements for about one month. Original order (placed last March) for 100 of these outfits now complete and received at central Medical Department laboratory. Additional orders to meet further needs have been placed by supply division, your office.

(b) Your attention is invited to the fact that the divisional laboratory units, attached to each division, are having the greatest difficulty in performing their functions because of the utter lack of transportation. It was intended that the two officers forming this unit should function as assistants to the sanitary inspector, one in general sanitation (more particularly the prevention and control of epidemic diseases) and the other supervision of the sterilization of water supplies. Actual laboratory work was to be of secondary importance. Several months ago it was requested that a light truck ($\frac{3}{4}$ -ton) and motor cycle with side car be supplied these units. This recommendation has been repeated on a number of occasions. The recommendation was incorporated in the proposed revision of Tables of Organization but this revision has not yet been approved at General Headquarters. It is suggested that a strong effort be made to secure this transportation as soon as the transportation problem eases up. Either the light truck or the motor cycle, preferably the truck, if furnished these units, would enable them to perform their duties in part.

On November 4 the chief surgeon wrote the director, Motor Transport Corps, that the time consumed in the manufacture of specially constructed laboratory trucks and bacteriological cars had been so protracted and the difficulty of their transport to France so great that ordinary cargo trucks had been substituted for them and that the first-mentioned classes of vehicles were not needed.⁹²

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- (68) Letter from the Surgeon General to the commanding officers, training camps, Fort Riley, Kans., and Fort Oglethorpe, Ga. Subject: Evacuation ambulance companies. On file, Medical Records Section (Chief Surgeon's Files 322.3211).
- (69) Letter from the chief surgeon, Line of Communications, to the chief surgeon, A. E. F., November 27, 1917. Subject: Evacuation ambulance companies. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files 322.3211).
- (70) Cable No. 322-S, from the chief surgeon, A. E. F., to the Surgeon General, November 27, 1917. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files 322.3211).
- (71) Memorandum from the chief surgeon, A. E. F., to the Surgeon General, December 8, 1917. Subject: Transportation of sick and wounded. On file, Medical Records Section, A. G. O., (Chief Surgeon's Files, 322.321).
- (72) Memorandum from Maj. A. P. Clark, M. C., to the chief surgeon, A. E. F., December 13, 1917. Subject: Need of evacuation ambulance companies. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 333.3211).
- (73) Letter from the Surgeon General to commanding officers, training camps, December 18, 1917. Subject: Personnel of evacuation ambulance companies. On file, Record Room, S. G. O., 322.3.
- (74) Second indorsement to letter from the Surgeon General, December 28, 1917. Subject: Personnel for evacuation ambulance companies. On file, Record Room, S. G. O., 322.3.

- (75) Letter from the chief surgeon, A. E. F., to the commander in chief, A. E. F., January 14, 1918. Subject: Provisional ambulance companies for immediate need. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 322.3211).
- (76) Telegram No. 196, from the commander in chief, January 17, 1918, to the chief surgeon, A. E. F. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files 322.3212).
- (77) Letter from Surgeon General to The Adjutant General, January 30, 1918. Subject: Use of U. S. Army Ambulance Service sections as evacuation ambulance companies. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 322.3211).
- (78) Memorandum from chief surgeon, A. E. F., to Chief of Motor Transport Service, March 5, 1918. Subject: Motor transportation for Medical Department. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 451).
- (79) Letter from Surgeon General to The Adjutant General, March 22, 1918. Subject: Personnel of evacuation ambulance companies. On file, Records Section, S. G. O., 322.3.
- (80) Letter from chief surgeon, A. E. F., to the chief of staff, A. E. F., September 26, 1918. Subject: Proposed general orders for evacuation ambulance companies. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 300.42).
- (81) Memorandum from the assistant chief of staff, G-1, G. H. Q., A. E. F., to the chief surgeon, A. E. F., October 18, 1918. On file, A. G. O., World War Division, Medical Records Section, (Chief Surgeon's Files, 300.42).
- (82) Manual for the Medical Department, 1916, par. 586, 778.
- (83) Letter from the chief surgeon, A. E. F., to the Surgeon General, August 12, 1917. Subject: Outline of laboratory organization, A. E. F. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files 322.3271).
- (84) Letter from the chief surgeon, A. E. F., to the general purchasing agent, September 20, 1917. Subject: Purchase of mobile laboratories. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 322.3271).
- (85) Letter from Baird and Tatlock, London, Ltd., to Maj. D. P. Card, M. C., December 12, 1917. Subject: Motor bacteriological laboratories. On file, A. G. O., World War Division, Medical Records Section, (Chief Surgeon's Files, 322.3271).
- (86) Letter from the director of laboratories, A. E. F., to the chief surgeon, A. E. F., January 11, 1918. Subject: Organization of the division of laboratories and infectious diseases. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 321.630).
- (87) Weekly report on the activities of the division of laboratories and infectious diseases, Dijon, for the week ending January 13, 1918, to the chief surgeon, A. E. F. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 321.630).
- (88) Letter from the director of laboratories, A. E. F., to the chief surgeon, A. E. F., May 22, 1918. Subject: Transportation for transportable laboratory units. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 322.3271).
- (89) Memoranda Nos. 5 and 7 (revised), chief surgeon's office, division of laboratories and infectious diseases, A. E. F., July 7, 1918, and August 14, 1918. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 321.630).
- (90) Letter from the Surgeon General to the chief surgeon, A. E. F., September 19, 1918. Subject: Mobile laboratories. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 322.327).

- (91) Weekly reports from director of laboratories to the chief surgeon, A. E. F. On file. A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 322.3271).
- (92) Memorandum from the chief surgeon, A. E. F., to the director, Motor Transport Corps, A. E. F., November 4, 1918. Subject: Trucks for mobile laboratories. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 322.3271).

CHAPTER VI

THE UNITED STATES ARMY AMBULANCE SERVICE

AMERICAN AMBULANCE SERVICE IN FRANCE PRIOR TO APRIL 5, 1917

Long before we entered the World War as an official participant, certain American unofficial volunteer groups and individuals rendered service to our future allies in the interests of humanity. Immediately after the beginning of the war in 1914, the American colony in Paris established the American Ambulance, following in their nomenclature the French practice of applying the term ambulance to the type of military institution which Americans call a hospital.¹ Shortly after the organization of this unit, a volunteer field service section was provided for it, this latter organization being developed by the efforts of individuals who had employed their own automobiles to remove wounded during the first battle of the Marne. It consisted of a volunteer ambulance corps known as the American Field Service, and was composed of sections, each made up of 20 ambulances, a mobile kitchen and a truck. The ambulances were almost exclusively of the Ford type. These sections were equipped by voluntary contributions of people in the United States.¹ A little later the Norton and Harjes units were organized along the same lines. At first the latter were quite separate, having been organized independently, but eventually they were consolidated into the Norton-Harjes unit, which was affiliated with the American Red Cross.¹

In these two organizations several hundred young Americans served before America entered the war, on much the same status as the American aviators of the Lafayette Escadrille. By the fall of 1917, the American Field Service had 34 ambulance sections organized and 3 sections undergoing organization, while the Red Cross had 12 sections in operation.² All of the sections were on duty with the French. Most of them were at the front, but one detachment, equivalent to three sections, was on duty in the entrenched camp of Paris.

These sections, having been created to aid the French Army, conformed to its tables of organization.² Each consisted of one lieutenant of the French automobile service, one American *sous-chef*, about 25 American drivers, and 8 French soldiers. Each section had 20 ambulances, 1 large truck, 1 small truck, 2 touring cars, and 1 kitchen trailer. The ambulances were of two types, viz, large cars which carried 4 recumbent or 8 sitting, and small cars with a capacity of 3 recumbent or 5 sitting. The function of these sections was solely that of transportation and did not include rendition of first-aid, establishment of dressing stations, or bearer work, as is the case with our

ambulance companies. The personnel, largely soldiers of adventure, were somewhat free and independent, but developed an esprit de corps and a morale that won high honor for their organization. To evacuate battalion aid stations, they ran their light cars day and night, amid shell holes and under shell fire, carrying wounded to the field hospitals. The success of these formations was undoubted; their aid to the French Army beyond question.



FIG. 43.—An ambulance of the Norton-Harjes Ambulance Unit

AMERICAN ORGANIZATION

When the French military commission, headed by Marshal Joffre, came to the United States, shortly after the United States entered the war, it was charged with the duty of making arrangements concerning the form of assistance to be first given. One of the subjects that came up at once was care of the wounded, for France needed on the firing line every able-bodied man available. Marshal Joffre asked that an ambulance service be supplied, and recommended the organization mentioned above. His request was approved and the War Department, by the following orders, directed the organization of the "United States Army Ambulance Service":²

General Orders,
No. 75.

WAR DEPARTMENT,
Washington, June 23, 1917.

* * * * *

II. 1. Under authority conferred by section 2 of the act of Congress "authorizing the President to increase temporarily the Military Establishment of the United States," approved May 18, 1917, the President directs that there be organized for the existing emergency, the enlisted strength being raised by voluntary enlistment or draft, as a part

of the Medical Department, the United States Army Ambulance Service, consisting of the following personnel:

Commissioned

Colonel.....	1
Lieutenant colonels.....	2
Majors.....	8
Captains.....	32
First lieutenants.....	160
	<hr/>
	203

Enlisted

One hundred and sixty ambulance sections, each consisting of:

Sergeant, first class.....	1
Sergeants.....	2
Corporal.....	1
Mechanics.....	2
Cooks.....	2
Privates, first class.....	26
Privates.....	11
	<hr/>
	45

2. The following transportation is authorized for each section:

Motor ambulance.....	20
Motor truck (2-ton).....	1
Motor truck ($\frac{3}{4}$ -ton).....	1
Motor car (5-passenger).....	1
Motor cycle (with side car).....	1

General Orders,

No. 124.

WAR DEPARTMENT,

Washington, September 30, 1917.

1. Paragraph 1, Section II, General Orders, No. 75, War Department, 1917, organizing the United States Ambulance Service as a part of the Medical Department, is amended so as to provide for a total of 34 captains, 169 first lieutenants, and 169 ambulance sections.

General Orders,

No. 149.

WAR DEPARTMENT,

Washington, November 28, 1917.

* * * * *

II. Paragraph I, Section II, General Orders, No. 75, War Department, 1917, is amended so as to fix the enlisted strength of each ambulance section authorized therein as follows:

Sergeant, first class.....	1
Sergeants.....	2
Corporal.....	1
Mechanics.....	6
Cooks.....	2
Privates, first class.....	22
Privates.....	11
	<hr/>
	45

The United States Army Ambulance Service occupied a unique position. Though composed of members of the American Army, its personnel in France, so far as the performance of duty was concerned, was under the jurisdiction of the French Government, to whose army it was assigned. Similarly, the

personnel assigned to Italy was under the jurisdiction of the Italian Government.³ While in emergencies the American Expeditionary Forces borrowed many of the sections from both France and Italy, it had no direct military control over them, except when they were thus actually in its service. To all intents and purposes, therefore, the United States Army Ambulance Service was a part of the French and of the Italian armies. The fact should be clearly recognized, and this organization distinguished from the ambulance organizations of the American Expeditionary Forces, which consisted of the personnel and equipment authorized by our Tables of Organization for the service of our own troops.³

Despite its assignment, however, to allied countries, the United States Army Ambulance Service was under the American Expeditionary Forces in matters affecting organization, discipline, and supply. Its personnel was paid, rationed, clothed, and equipped through the American Expeditionary Forces, and its motor vehicles, spare parts, gasoline, and oil were furnished by the American Government.³

The orders quoted above were based on the general plan that an ambulance section would be assigned to each division of the French Army; that for every 5 sections a repair shop and general supply depot in command of a captain would be established; that for each group of 20 sections an inspector with the grade of major would be provided, and that the higher administrative work of the service would be conducted by 1 colonel and 2 lieutenant colonels. This general scheme, like many other preconceived plans for the operation of American troops abroad, was ultimately greatly modified. The senior officer of the organization, with 30 sections, went to Italy for duty with the Italian Army, while the large number of sections in France operated under the command of an officer commissioned in the Medical Corps and not in the Ambulance Service.⁴

Plans for securing personnel and equipment were begun several weeks before the first order, that quoted above, was promulgated by the War Department. A medical officer was directed to begin recruiting for the Ambulance Service in Philadelphia.⁵ Applicants were enlisted in the Medical Enlisted Reserve Corps. Two other medical officers were ordered to Philadelphia to take charge of the recruits.⁵

As soon as practical, Camp Crane was established at Allentown, Pa. primarily as a mobilization and training camp for the Ambulance Service, though later it was utilized as a general mobilization camp for Medical Department units.⁵

MOBILIZATION AT CAMP CRANE

The rumor had spread rapidly that an ambulance service would probably be among the first organizations to be sent abroad, and applications for enlistment by men who were impatient to go overseas were immediately received from all parts of the United States.⁵ Colleges asked to be permitted to form complete sections of their own men, and the War Department granted their requests. Over 40 colleges and universities furnished 1 or more sections of 45 men each, who were sent to Camp Crane in charge of some one of

the party who had been selected as leader. In addition to the men recruited at the Ambulance Service recruiting station at Philadelphia, and the large number of men enlisted at the colleges, a considerable part of the personnel was derived from the previously organized American Red Cross ambulance companies, who also desired immediate service. Pasadena, Calif., the University of California, Washington, D. C., Cleveland, Ohio, the University of Minnesota, and the University of Washington each contributed an ambulance company (Army standard) which was reorganized into three Ambulance Service sections; some of the companies secured sufficient additional recruits from their home localities to make a fourth section. A number of cities and a few industrial corporations contributed complete sections to the service, and a very considerable number of men came to it from Army recruiting stations throughout the country which were authorized to send applicants to Camp Crane.⁵ Volunteer enlistments furnished all the personnel for the sections of the Ambulance Service except for a few which were organized from drafted men, just before the armistice. The enlisted personnel as a whole was of a very high grade.⁶

At first officers of the Medical Reserve Corps were assigned to command sections, but they were gradually replaced by officers promoted from the ranks who were given commissions in the Ambulance Service. So when the armistice was signed there were few medical officers on duty with it, for by this time most of its commissioned personnel were officers who had entered the service as privates.⁶

The headquarters of the Ambulance Service moved from the recruiting rendezvous at Philadelphia to Camp Crane, Allentown, Pa., on June 9, 1917.⁶ Some recruits for the organization had already arrived at the camp, and in a short time 3,000 men were assembled.⁶

The two senior medical officers then on duty there had no Regular Army assistants, either commissioned or enlisted, except eight lieutenants, recent graduates of the Army Medical School. A few men who had had military drill at school and the men who had had some experience in drilling the Red Cross ambulance companies rendered invaluable service by helping to establish military procedure and by teaching elementary military principles.⁶

TRANSPORT

The French High Commission was very insistent in its recommendation that Ford ambulances, touring cars, and light trucks be used.⁷ This requirement was based on experience during the preceding years of the war. It was stated that the lightness of this car, its durability, and the ease with which it could be repaired and its parts interchanged gave it great superiority for the work to be performed. Therefore, orders were placed by the Ambulance Service for approximately 2,400 Ford ambulances, 120 Ford trucks, 120 Ford touring cars, 120 Packard trucks, and 120 motor cycles with side cars, with an allowance for replacement and a fair quantity of spare parts. By special effort on the part of the manufacturers early delivery was secured. This large amount



FIG. 44.—Type of ambulance used by the U. S. Army Ambulance Service

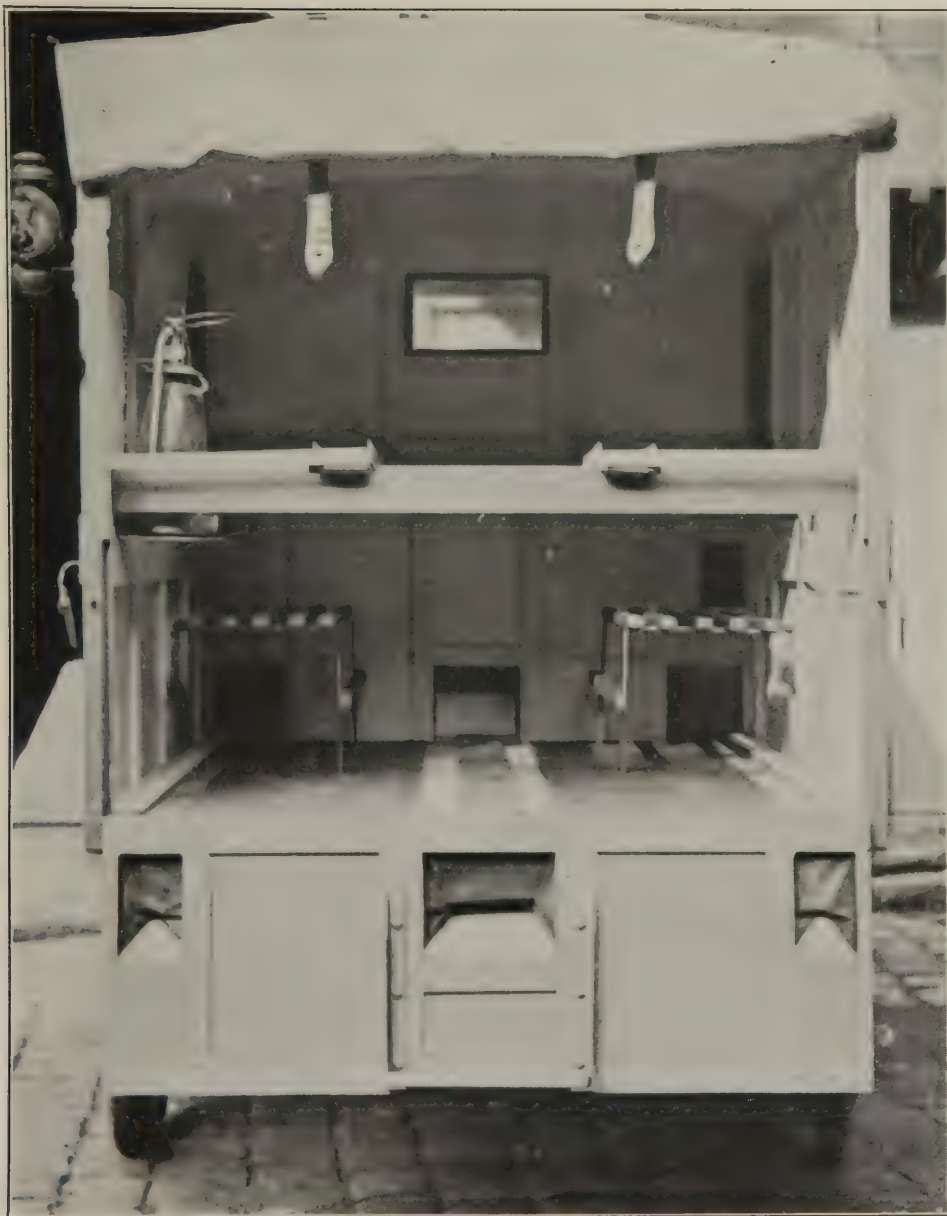


FIG. 45.—Interior view of ambulance, U. S. Army Ambulance Service

of motor equipment having arrived at the seaboard, before cargo space was at a premium, was shipped immediately and landed at St. Nazaire to await the personnel for which it was intended.⁷

When it became known, after we had entered the war, that our Government had agreed to furnish the French Army a number of ambulance sections, the American Red Cross and the people in the United States who were supporting the American Field Service proposed to the War Department that it take over the sections they had already formed, which were then operating in France.⁸ This proposal was accepted.⁸ It was contemplated that 120



FIG. 46.—Section No. 646, U. S. Army Ambulance Service

sections of the United States Army Ambulance Service be organized in America and that the remaining sections, to a total strength of the 160 sections then authorized, be obtained by enlisting in the military service the men composing the volunteer sections then at work in France.⁸ In July, 1917, a colonel of the Medical Corps, United States Army, was designated as chief, United States Army Ambulance Service, and accredited to the French Government to arrange the details for the operation of that service and for the enlistment in it of the personnel of the ambulance sections of the American Field Service and of the American Red Cross. This medical officer visited Camp Crane before sailing for Europe. At Camp Crane it was arranged that the 20 sections which had been organized in the United States, and for which complete equipment had been secured, should sail as soon as ocean transportation was available. These sections sailed August 7, 1917, and disembarked at St. Nazaire, August 21, 1917.⁸

Some discrepancy occurred between the number of sections authorized and the number thought necessary at different times. The French War Department stated that Marshal Joffre had asked for 50 sections in addition to the volunteer sections already serving with the French Army.⁹ The chief of the United States Army Ambulance Service reported that, in August, 1917, he had been informed by a representative of the *directeur, service automobile*, that so large a number of sections as that indicated above was not deemed necessary; that the total number desired was 63.¹⁰ On August 27, a representative of the *directeur, service automobile*, informed the chief of the United States Army Ambulance Service that the needs of the armies of the north and northeast were 20 sections in addition to the volunteer sections then in the French service, and the coming of further sections was stopped by cable on August 28.¹¹ Also the finality of the assignment of these sections to the French was brought into question, for on August 17, 1917, the chief of the Army Ambulance Service in a memorandum for the commanding general, A. E. F., stated that the sections organized should be subject to recall for service with the American Army when needed.¹² He had been authorized to militarize 40 sections from the personnel of the volunteer sections already serving in France; but finding on his arrival in France that the American Field Service had 37 sections organized and the American Red Cross 12, he requested authority to organize in France a total of 49.¹² In point of fact, only about 25 sections of the Army Ambulance Service were organized in France, for most of the men of the volunteer organizations there preferred to go into aviation or into other services, and many did not wish to bind themselves at all by enlistment in the Army.¹³ Consequently only about 500 men joined the Army Ambulance Service in France. The great majority of these came from the American Field Service, about half of whose members joined, and only a few from the Norton-Harjes unit.¹³

On September 26, 1917, the commander in chief, A. E. F., requested that 10 sections be sent to France as soon as possible, in addition to the 20 sections already there, plus 300 unassigned recruits.¹⁴ His telegram also stated no more ambulances were needed, as there was an abundance of motor transportation on hand. On October 11, 1917, the commander in chief, A. E. F., informed the chief of the Army Ambulance Service that the French military mission requested that the sending of further sections be stopped until after some 12,000 automobile mechanics had been sent to France, and that, thereafter, 50 additional sections be sent according to tonnage facilities, and that the shipment of the last 50 sections be held up until the following spring.¹⁵ In this matter there was lack of coordination between the French Ministries of War and of Munitions. Ambulance sections of the French Army were, with all other motor transport, under the jurisdiction of the Minister of Munitions. On December 17, 1917, the French military mission proposed that 73 additional sections be sent over during the first five months of 1918. The chief of the Army Ambulance Service then wrote the commander in chief that this corresponded exactly with the wishes of the *Service de Santé*, viz, that all the 120 sections organized in the United States be brought

over but that the *directeur, service automobile*, who was in actual control of the transport service of wounded at the front, did not wish to turn over more than one-third of this to the Americans.¹⁶ On January 11, 1918, relative to these 73 sections, the commander in chief replied that, because of the tonnage situation, he could not accede to the request for 73 additional sections;¹⁷ and on April 30, when asked when the remaining 57 sections would be sent, he replied that he had cabled a recommendation that the personnel of the sections remaining in America be used as replacements and no longer be kept intact in ambulance units.¹⁸ August 13, 1918, the commander in chief wired that 48 sections were urgently needed,¹⁹ this being the number still believed by him to be available under General Orders, Nos. 75 and 124, quoted.

On August 26, 1918, the commanding officer at Camp Crane reported that 82 sections had been sent overseas and 8 had been disbanded, but that 31 sections were being organized and motor transport for them secured.²⁰ The Surgeon General had based his figures, until this time, on the following data: Shipment of 59 sections to France, 30 to Italy, and organization of 49 in France, thus leaving a balance of 31 sections in the number authorized.²¹ On September 16, the commanding officer, Army Ambulance Service in France, wrote that of the 82 sections in France only 30 had been organized in that country and that there were 30 other sections in Italy. The 31 sections now requested organized left a balance of 26. The request that 48 sections be sent from the United States was based on these figures, leaving a balance of 9.²²

A large reserve of ambulances which had been accumulated for the Army Ambulance Service was appropriated by the Motor Transport Corps during the operations in the Marne area for conversion into trucks.²³ This reserve was not needed by the Army Ambulance Service, but this action eliminated ambulances needed later by the United States Army.

While the misunderstandings noted above were being straightened out, our Government had decided to send troops to Europe as rapidly as possible, and the priority list for shipment of troops was based on calls for them from General Headquarters of the American Expeditionary Forces. Until all differences of opinion in the French service concerning the number of ambulance sections needed had been settled, no place on the priority list could be secured for the sections which were awaiting transportation at Camp Crane.⁸ But at the end of December, 1917, 10 more sections, in January 17 sections, and in March 5 sections were shipped, making a total of 52 organized sections sent from Camp Crane for service in France before the armistice was signed.⁸ On June 13, 1918, 30 sections were sent direct to Italy.²⁴ Casuals, in detachments numbering from 100 to 300, were also forwarded from time to time and were organized into sections after their arrival in France.²⁵ The United States Army Ambulance Service with the French Army at the time of the signing of the armistice consisted of 184 officers and 4,858 enlisted men, with 113 organized sections.²⁶ A number of the militarized volunteer sections had not been completed when taken over and had to be augmented

at once by the assignment to them of personnel from the United States. At the time of the armistice about one-tenth of the service consisted of volunteers in France from the old ambulance service, five-tenths had come from Camp Crane, and four-tenths were draft personnel.²⁷

As previously explained in part, while the French Government first asked for 63 sections, after about 70 had been made available, it informed the commander in chief of the American Expeditionary Forces that no more were required.¹⁰ Then, after providing 30 sections for assignment to the Italian Government, a considerable number of sections already organized in the United States were disbanded and their personnel distributed to other branches of the service. This was due to the fact that the French Ministry of Munitions had informed a representative of the commander in chief that no more would be required.¹⁰ It afterward developed that the French had made a serious mistake in declining the remainder of the sections organized for their service. This misunderstanding arose from the fact that under the French organization its *service automobile* provided and controlled under the department of munitions all motor transportation, including ambulances, though these last-mentioned vehicles, when provided, were at the disposal of the Medical Department.²⁸ The French Medical Department had asked, through the department of war and through the French military attaché in Washington, that the remaining sections then organized in the United States (about 90 in number) be sent overseas in such manner that the last would arrive before the beginning of the spring of 1918.²⁹ It appears that the faulty calculation, as regards ambulances, of what would be needed in open warfare had arisen from consideration of only what had been required in trench warfare. As a matter of fact, the need for ambulances in the open warfare of 1918 was found to be very much greater than the French Department of Munitions had anticipated, for hauls were longer, wear and tear more severe, destruction by artillery fire was more frequent, and facilities for repair were relatively less. A further unanticipated shortage occurred because the ambulances necessary for our own troops did not arrive in France in sufficient numbers; therefore it was necessary, as mentioned above, for the American Expeditionary Forces to borrow from the French and Italian Governments a number of the sections of the Army Ambulance Service which our Government had attached to them.²⁸ At the time of the St. Mihiel operations, for instance, our own shortage was very great, as hardly 50 per cent of the number authorized had been sent to France. It was only through the generosity of the French and Italians in turning back to us these sections which had been organized for, and presented to, their respective Governments that the transportation of our wounded could be handled.²⁸

Thus it occurred that in the decisive contests of the summer and autumn of 1918 sections of the United States Army Ambulance Service were on duty with the Italian and the American Armies.

The story of the sections sent to Italy (the Italian contingent of the United States Army Ambulance Service) is given elsewhere in this volume in the discussion of the activities of the Medical Department in Base Section 8.

In the late summer of 1918, as regulation ambulance companies and ambulance equipment for the American Expeditionary Forces had not arrived and as there seemed little prospect of them being furnished, a request was sent to Washington that 31 sections of the Army Ambulance Service, authorized by General Orders, No. 75, War Department, 1917, but which had not been provided, be reorganized and sent to France for service with the American Expeditionary Forces. This request was approved, but, because of difficulty in securing priority transportation, none of these units arrived until after the armistice.³⁰

UNITED STATES ARMY AMBULANCE SERVICE IN FRANCE

The following account of the United States Army Ambulance Service in France is very much condensed from the complete historical report of the commanding officer of that service.

ORGANIZATION IN FRANCE

HEADQUARTERS

The organization of the headquarters of the United States Army Ambulance Service with the French Army was a miniature *Quartier Général*. It functioned through divisions or departments with officers at their heads who were directly responsible to the chief of the service. The peculiar status of the service, its detachment from the American Expeditionary Forces, and its attachment to the French Army, presented unique and difficult problems of organization and administration. Liaison was necessary with the American Army as it was with the French, but separation from the American Expeditionary Forces led naturally to organization of the Army Ambulance Service into a body complete and self-sustaining. As the service was forced to operate more or less independently, it was necessary to get many special authorizations of general application.³¹

Careful centralization and systematization of the service contributed much to its success. The large problems of keeping in touch with the many sections scattered with the French Armies all along the front from Dunkerque to Belfort; clothing, subsisting, and paying the personnel; handling their personal problems; delivering and collecting their mail; caring for their sick and wounded; and keeping their ambulances in serviceable condition, all fell to headquarters.³¹

Headquarters activities began immediately after the arrival, with the first contingent of American troops in France, of the chief of the service and a small office force. It was the duty of this advance party to establish offices, make arrangements for the arrival of the first sections, establish liaison with French and Americans, begin the enlistment and militarization of the American Field Service and Red Cross sections then working at the front, organize a base for the service, and arrange numerous relevant matters.³¹

The War Department order creating the United States Army Ambulance Service made no provision for headquarters personnel, for the personnel necessary to conduct the various assembling and repair plants, or for a base camp.

This personnel was obtained by reducing the sections from 45 to about 40 enlisted men each. The headquarters enlisted personnel was formed into a section (S. S. U. 650), to which all men on duty at the headquarter's office and all its subdivisions located in Paris were assigned. This headquarters organization consisted of 18 officers and about 150 enlisted men; that at the base camp of 9 officers and 120 enlisted men.³²

In the beginning, the headquarter's offices were situated at 10 Rue St. Anne, Paris. In October, 1917, they were removed to 27 Rue Constantine. With the growth of the service and the demand for larger quarters they were moved again, in December, 1917, to 47 Rue Penthieu, where they remained until recalled from service with the French.³²

The main divisions of the headquarters organization were as follows: Commanding officer and executive officer, motor transport, quartermaster, statistical, promotions and morale, attending surgeon, inspection, shipping and post office, and general.³²

COMMANDING OFFICER AND EXECUTIVE OFFICER

The commanding officer maintained an office at headquarters and directed the activities of the Ambulance Service through divisions which will be discussed below. His executive officer assisted him in this according to the usual military practice. It should also be explained that, though the office of the commanding officer was in Paris, he was found often in the field.

MOTOR TRANSPORT DIVISION

Second in importance to the actual administration of headquarters by the chief of service, assisted by the executive officer, came the administration of the Motor Transport Division.³³ Maintenance of transportation at a high standard, of ordnance and medical property, and regulation of the issue of spare parts and other motor supplies, were the primary duties of this division. These functions were carried on through the medium of 10 repair parks which were attached to as many French automatic repair parks, of which there was one for each army area.

For convenience of administration the Motor Transport Division was subdivided into five branches, all of which were coordinated in the office of the division's head. These branches were as follows: Motor supply depots, service garage, assembly and revision plant, supply and ordnance, direction and inspection.³³ At the heads of these departments were officers who had had practical experience in their special lines of work.

MOTOR SUPPLY DEPOT

The motor supply depot was planned and perfected by officers from the Army Ambulance Service.³³ It was situated in Paris where it could be in touch with the *Magasin Central Service Automobile* of the French Army, which supplied part of its material. The open market at Paris also furnished certain supplies, which were purchased by the motor supply depot, but only

after authorization by the head of the division. Most of the supplies of the service came directly from America, where they were purchased from the factories by the Quartermaster Corps and shipped to Paris. The supply depot from time to time submitted requisitions for the necessary spare parts, but kept on hand sufficient for issues for several months.³³

The motor supply depot at first issued material directly to the sections, but after the park system had been perfected it supplied them, and the parks in turn supplied the sections. This development greatly increased the efficiency of the supply service.³³

SERVICE GARAGE

The service garage was charged with the storage, upkeep, and repair of all motor vehicles attached to headquarters and was located at the barracks of the headquarters detachment.³⁴

ASSEMBLY AND REVISION PLANT

In order to provide for the assembling of ambulances in great numbers near the base of supplies, where their bodies could be built satisfactorily, the assembly and revision plant of the service was established in Paris, on Avenue St. Ouen.³⁴ Here the chassis shipped directly from base ports were put together and the bodies, furnished by Paris makers, fitted on. A number of men, belonging to the Army Ambulance Service, were kept constantly engaged assembling these vehicles.³⁴

This plant also served as a revision park for the service. When a section was completely worn out, the personnel of the section was sent to the base camp at Ferrieres, and its transport, including motor ambulances, touring cars, trucks, etc., was forwarded to the plant in Paris, where it was overhauled and made fit again for service. When this was impossible the cars were salvaged and the spare parts used to repair those of other sections.³⁵

Among the departments of the plant were a carpenter shop, where the ambulance bodies, often completely riddled by shell fragments, were repaired, a paint shop, a radiator repair shop, a motor cycle repair shop, and a machine shop for general work. The whole plant was organized so as to care completely for the assembling, repairing, and supplying of motor transportation to the front.³⁵

The reserve cars of the Ambulance Service were held in this park, whence they were shipped to the smaller parks nearer to the front. They were issued in small numbers in order not to embarrass the park commanders, who always kept their material as near the minimum as practicable in order to be ready to move promptly.³⁵

SUPPLY AND ORDNANCE

The supply and ordnance department was concerned with the record of motor transport property, of medical property, and with the operation of the supply department. The following totals were reached October 25, 1918.^{35, 36}

MOTOR VEHICLE SITUATION

VEHICLES IN SERVICE

Ford ambulances.....	2,113	Light trucks (Fords, 4 converted ambulances).....	135
Ford touring cars.....	152	Two cars (converted ambulances).....	2
Heavy trucks.....	94	Kitchen trailers.....	57
Consisting of the following types:		Motor cycles.....	62
Packard.....	23	Side cars (5 fitted for stretchers)....	70
Garford.....	22	Work shops (4 Packard; 3 Hotchkiss).....	7
White.....	32	Cadillac touring car.....	1
A. E. C.....	6	Packard touring car.....	1
Riker.....	5		
G. M. C.....	2		
Sterling.....	2		
Pierce Arrow.....	1		
Peugeot.....	1		

Of all the foregoing, the following were received as gifts to the United States:

Ambulances.....	709	Touring cars.....	33
Heavy trucks.....	32	Light trucks.....	28
Consisting of the following types:		Workshops (3 Hotchkiss, 2 Renault).....	5
White, 2-ton.....	28	Kitchen trailers.....	28
White, 3-ton.....	3		
G. M. C., 1-ton.....	1	Total received.....	835

LOST IN SERVICE

Ford ambulances.....	126	Kitchen trailers.....	3
Manner of loss:		Manner of loss:	
Shell fire.....	59	Shell fire.....	1
Captured.....	22	Captured.....	1
Road accident.....	9	Scrapped.....	1
Abandoned.....	13	Motor cycles.....	7
Scrapped.....	23	Manner of loss:	
Ford touring cars.....	8	Shell fire.....	1
Manner of loss:		Captured.....	2
Shell fire.....	2	Road accident.....	3
Captured.....	1	Scrapped.....	1
Fire.....	1	Side cars.....	3
Road accident.....	1	Manner of loss:	
Abandoned.....	1	Road accident.....	2
Scrapped.....	2	Scrapped.....	1
Heavy trucks.....	0	Workshops.....	2
Light trucks.....	8	Manner of loss:	
Manner of loss:		Scrapped.....	2
Captured.....	1	Chassis (reception park).....	36
Scrapped.....	7	Manner of loss:	
		Scrapped.....	36

TRANSFERRED TO OTHER SERVICES

The following were separated from the American Ambulance Service by transfers to other branches to fill pressing needs for transportation in the

American Expeditionary Forces in the latter part of 1917. They were distributed as follows:³⁷

To chief quartermaster.....	282	To Signal Corps.....	62
Consisting of:		Consisting of:	
Ford ambulances.....	252	Ford ambulances.....	60
Motor cycles and side cars.....	30	Ford chassis.....	2
To naval aviation (Ford ambulances).....	6	Issued to the Medical Department.....	285
To Y. M. C. A. (Ford ambulances).....	5	Consisting of:	
To American Red Cross (Ford chassis).....	18	Ford ambulances.....	273
To Engineer Corps (Ford ambulances).....	150	Motor cycles and side cars.....	6
		Ford touring cars.....	6

In all cases the property was transferred to the receiving service under paragraph 671, Army Regulations, and in conformity with Memorandum 179, Surgeon General's Office, War Department, January 11, 1918. This involved a transfer of funds, except when transfer was made to the Medical Department.³⁷

OPERATING SUPPLIES

The activity of the Ambulance Service is indicated by the following table, which gives the actual consumption of tires and tubes, gasoline and oil for the six months, February to July, 1918, inclusive:³⁸

Month	Gasoline + Kerosene		Oil	Tires	Tubes
	Liters	Liters	Liters	Number	Number
February.....	105,934	3,445	7,115	408	783
March.....	172,501	4,005	7,921	728	1,464
April.....	203,325	4,023	5,603	990	1,826
May.....	249,628	3,154	6,175	1,100	2,310
June.....	326,746	2,611	10,375	1,435	3,039
July.....	326,214	3,708	11,160	1,585	3,134

These materials were furnished the units directly from French depots. At each echelon and section an account of these issues was kept and a report made to the headquarters of the automobile service, French Army. This consolidated report was submitted to the chief of service in the form of a claim. A monthly settlement was made in the form of receipts drawn from the American supply book separately: (a) For gasoline and ingredients; (b) for tires and tubes. The gasoline and ingredients were returned in kind, and the bill for tires and tubes paid on public voucher.

DIRECTION AND INSPECTION

The direction of the motor transport department was performed by a lieutenant colonel of the United States Army Ambulance Service, who was in close touch with the chief of service. His orders were issued "By direction of the chief of service." After consultation with the chief of service, he issued all directions concerning care of transportation, equipment allowances, supply of parks, and the relationship to be maintained between the parks and the sections. He was in close liaison with the French automobile service and attended to the matriculation of Army Ambulance Service cars in the French service. One of his duties was to determine where parks could

be placed to the greatest geographical and tactical advantage, reporting his conclusions to the chief of service who, if he approved them, ordered the parks moved accordingly. An assistant to the director of motor transport cooperated in the reporting of and accounting for transportation. Another officer under the immediate jurisdiction of the director was the inspector of the transportation of the service. With the permission of the chief of service, the inspector of transportation might send one of his assistants on inspection trips at times when he himself was needed elsewhere. The reports from the parks on the conditions of transportation of the sections came to his office every 10 days, so that an accurate record of the actually moving transportation was available at all times.³⁹

QUARTERMASTER

The quartermaster of the Army Ambulance Service was a major of the Quartermaster Corps; the enlisted force under him, however, was composed of enlisted men of the United States Army Ambulance Service. The principal storeroom, as well as the office of this department, was at headquarters in Paris. Here, the administration of the quartermaster service was carried on. Besides the outfitting of sections, the quartermaster handled the rental and leasing of all buildings needed by the service. There were four sub-departments of the quartermaster's office:³⁹ (1) Supply department; (2) sales commissary; (3) paymaster; (4) advance depot at Metz (after the signing of the armistice).

SUPPLY DEPARTMENT

The supply department had charge of the requisitions, and issued clothing and other quartermaster property to the sections.³⁹ Requisitions were submitted through the medium of the *bureau central militaire* (postal service of the automobile service), which brought in the requisitions from the sections and took back the articles requisitioned to the front. All supplies of this character were sent directly to the sections. The unusual conditions existing in the Ambulance Service where the sections were widely scattered made the furnishing of their supplies a very difficult task. Their service with the French also called for a different equipment from that supplied to other American troops in the way of raincoats, rubber boots, and overcoats.⁴⁰

The supply department was of course in direct touch with the chief quartermaster of the American Expeditionary Forces. It functioned promptly and the men of the service were never without the necessary supplies, those which contributed to their comfort and those which allowed them to present a smart appearance at all times. The French divisions, to which the sections of the service were attached, were, for the most part, "crack" divisions whose combat effectiveness, discipline, neatness, and smart appearance were the pride of the French Army. They exacted from the ambulance sections with them the same smartness and good appearance of uniform as they did from their other troops.⁴⁰

The clothing of a section was rated by means of frequent inspections made by the inspector of personnel. While only the worn-out uniforms were

exchanged, a uniform of good fit and appearance was always kept on hand for inspections and ceremonies.⁴⁰

SALES COMMISSARY

In order to facilitate the supply of sections with additional food, and, in some cases, with the actual ration, a sales commissary was established at headquarters.⁴⁰ This kept on hand certain subsistence stores, which could be ordered by any section commander to supplement the ration or to form the actual ration. As the sections attached to French divisions did not draw rations in kind, but were allowed commutation, amounting to 70 cents per man per day, some difficulty was experienced in their getting food in the field.⁴⁰ Sections frequently purchased the French ration in the open market and then supplemented with purchases from the commissary. The French ration varied a good deal in different divisions and in different parts of the front and for this reason if no other the sales commissary of the service was a very necessary part of the supply system.⁴⁰

PAYMASTER

The paymaster of the service looked after the payment of individual officers and men and the issuance of ration money and travel expenses.⁴¹ The pay rolls were sent to his office by the *bureau central militaire* (postal service) just after the beginning of the month. After the computation was completed, the paymaster made out a schedule, which included the different parts of the service, and appointed a time when all section commanders should be at the parks to obtain the pay for their sections. As the sections were widely separated it was impossible for him to make a visit to each section. The parks, however, were easily reached. In the absence of any section commander, the park commander signed for the money and later delivered it in person to the section commander, on his next tour of inspection.

The ration accounts were sent in twice a month, as the French commissary required that sections settle their ration bills every 15 days.⁴¹ These were paid on regulation voucher. Until October 11, 1918, all money saved from rations could be placed in a section's ration savings account. A general order issued that date prohibited the saving of money from the ration and thereafter if any money was left over at the end of the month this amount was deducted on the next ration voucher.⁴¹ The system worked well and gave no trouble, although the procedure, through force of circumstances, was somewhat unusual.

ADVANCED DEPOT AT METZ

After the armistice, an advanced depot was established at Metz to supply sections which accompanied the Third Army into Germany.¹⁴

STATISTICAL DEPARTMENT

The statistical department rendered consolidated daily and weekly reports of the personnel of the service to General Headquarters, American Expeditionary Forces. An army field clerk was in charge of the office, which was

a subbranch of the Paris statistical bureau. All data concerning sick and wounded of the Ambulance Service were collected, verified, and reported from this office.⁴² A record was kept of all communications forwarded to headquarters, American Expeditionary Forces, as well as of all administrative data concerning the personnel of the service.

With the discontinuance of the muster roll, and the adoption of the monthly roster, additional men had to be placed in this department, because of the increased clerical work involved. All service records, officers' classification cards, and section statistical reports, were forwarded through this office. Difficulty was experienced by this department in rendering adequate reports at the appointed time. This was due to the fact that though some of the sections were near, others were far away. Also there were differences in their transportation facilities so that statistical reports, mailed by all sections on the same day, sometimes reached Paris days apart. This situation, however, was overcome in part by constant communication with sections and by use of the telephone when necessary.⁴²

PROMOTIONS AND MORALE

The department of promotions and morale was concerned with the general welfare of both officers and enlisted men of the Army Ambulance Service. The officer in charge supervised the discipline of the members of the service, their military bearing and their personal appearance.⁴³

ATTENDING SURGEON

The attending surgeon of the United States Army Ambulance Service was charged by the chief of the service, with the responsibility for professional care of the sick and wounded of the members of the service. In addition he was sanitary inspector, and supervised the sanitation of the various ambulance sections.

For the sick, a camp hospital was established at the base camp, referred to below. This hospital was under the general supervision of the attending surgeon, but was in the charge of a junior medical officer. Here, all sick of the Army Ambulance Service were sent when their hospitalization could be controlled by the attending surgeon. For others, such as members of the service on duty with French and American divisions, arrangements were made by the attending surgeon whereby these sick and wounded would be evacuated to American Red Cross Hospitals Nos. 1 and 2, Paris.⁴³

INSPECTION

In order to facilitate the control as well as to coordinate the functioning of sections, three officers, each at the head of his own department of the Ambulance Service, were detailed as inspecting officers.⁴⁴ These were: The inspector of transportation, the inspector of personnel, and the attending surgeon. The reports of these officers with their recommendations made on their return from inspection trips were submitted to the chief of service. The

chief of service acted as general inspector for the whole service in all its parts.⁴⁴

The inspector of transportation, who has been previously mentioned, looked after the care of the cars, the work of the repair shop, the supply of spare parts and the general condition of all transportation. He was generally at the front, during an attack, to see that the sections then functioned properly. He cooperated with the park commander concerned, each of whom acted as a subinspector of transportation and equipment, and consulted him before making out his own inspection report.⁴⁵

The inspector of personnel was head of the department in charge of promotion and the general welfare of officers and enlisted men. He looked after the discipline, reported on the correctness of the military attitude of the men, inspected the condition of their personal outfits, audited and revised reports of section funds, and reported on the morale of the sections. In case there had been trouble in a section, he made inquiry concerning the action taken by the section commander, or checked up on the behavior of this officer, if there had been an adverse report on him by a park commander.⁴⁵

The attending surgeon, who was sanitary inspector, investigated the general sanitation of the personnel of the parks and sections. He saw to it that the venereal prophylaxis reports were carefully made, he inspected the latrines, advising concerning their locations. He instructed officers concerning newly published sanitary rules and received reports having to do with the supply and preparation of food. He investigated the condition of the men's teeth, and gave general advice concerning the health of individuals. His duties proved especially important during the colder months.

Through this system of inspection, the service was kept at a high degree of efficiency. The inspecting officers were constantly in the field and were required to visit each section at least once every six weeks. It was found the inspections greatly stimulated the section commanders.⁴⁵

SHIPPING AND POST OFFICE

The function of the shipping and post office department was primarily that of receiving mail intended for officers and enlisted men of the Army Ambulance Service and forwarding it to their proper addresses.

Because all mail matter for sections of the Army Ambulance Service serving at the front was conveyed to French military base parks by the French postal service, the shipping and post office department was located at the bureau of the *Service Postal Convois Automobiles* of the *Bureau Central Militaire* in Paris.⁴⁶

ACCIDENT DEPARTMENT

In the accident department a record of each accident occurring in the Army Ambulance Service was kept, together with the names of witnesses, reports, and claims, if any.

Because it was essential that the officer in charge of this department be familiar with not only the French language but French civil law as well,

one possessing these qualifications was so detailed.⁴⁷ Since all of this officer's time was not occupied investigating accidents, and because his special knowledge of French and the law were readily available, he was charged with the translation of French official documents reaching headquarters of the Ambulance Service, and was made summary court officer, and reviewed all summary courts-martial of the sections of the Ambulance Service. One other duty that he performed was that of censoring the mail of the Ambulance Service.⁴⁸

COUNCIL OF ADMINISTRATION

The council of administration comprised three officers of the Ambulance Service. The purpose of the council was to provide means of clearing the money accounts of section commanders. To effect this, the council audited all records pertaining to these accounts. It also administered the Ambulance Service fund.

The Ambulance Service fund was established to provide means for purchasing comforts for members of the Ambulance Service on their way home to the United States, and was raised by requiring each section of the service to deposit in a designated bank all money in their separate funds over 2,000 francs.⁴⁸

FRENCH LIAISON OFFICER

An officer of the French automobile service was attached to headquarters of the Army Ambulance Service to maintain liaison between that service and the French Government. This officer was attached to the office of the chief of the Ambulance Service and accompanied the chief of service on all his trips to the front.⁴⁸

All direct orders issued by the chief of the Ambulance Service, affecting the *Directeur Service Automobile*, were issued through the liaison officer.

It was the duty of the liaison officer to maintain a constant touch with the movements of the *Directeur Service Automobile* in order that all regulations governing the sections of the French automobile service might be properly interpreted to the United States Army Ambulance Service.⁴⁹

BASE CAMP

Immediately after the establishment of the Army Ambulance Service headquarters in Paris, steps were taken to procure a suitable site for a base camp. The first location was at Sandricourt, about 35 km. (about 21 miles) north and west of Paris.⁵⁰ This soon proved inadequate to meet the demands made upon it, and in February, 1918, after many disappointments, a new location was procured at Ferrieres en Gatinais, about 100 km. (about 70 miles) south of Paris.⁵⁰ The main building here had formerly been a monastery built 700 years before. In this building were established the headquarters of the camp, the infirmary (a floor being devoted to convalescents), the pathological laboratory, the quartermaster's storehouse, and the guardhouse. In the grounds of the property five Adrian wooden barracks were erected.

one of which was used as a combination kitchen and mess hall. The buildings now furnished accommodations for 500 men.⁵¹ By taking over an old tannery, which was near by, and the erection of additional barracks, the capacity was increased to 2,000.⁵² A complete power plant was installed, latrines, garbage pits, and incinerators were provided, shower baths were procured, and other steps necessary to the formation of a comfortable and sanitary camp were instituted. There was a permanent personnel of about 150 officers and men from which were furnished all permanent details, including the necessary teaching force for a school for cooks, a school for mechanics, and a school for instructing noncommissioned officers in paper work. All new sections and all casualties arriving from the United States were first sent to this camp for a preliminary course of instruction.⁵³ Sections were fitted out here with personal equipment, quartermaster and medical supplies. The casualties, having been equipped, were then used as replacements for sections at the front, or were organized into new sections. An effort was made to send here for convalescence all sick and wounded eventually to be returned to duty.⁵³

During demobilization, as mentioned elsewhere, all the sections were sent to this camp for a thorough sanitary survey, including disinfestation, and to turn in all their property not needed en route home. They were then sent from this point to the base ports for embarkation.⁵³

THE PARK SYSTEM

It is essential that this be described in order that the operation of the ambulance service in the field may be understood.

To each French army serving on the Western Front, 12 in number, were attached about 3,000 vehicles of all sorts, makes, and types. For the purpose of supplying, repairing, and replacing these vehicles, the automobile parks of the French armies were established.⁵⁴ To each army there was attached a reserve park; to each group of armies a revision park; and for the whole army a central clearing park at Versailles was maintained, through which all matriculation records, replacements of personnel, reports of promotion, decorations, and special orders of the ambulance were required to pass.⁵⁴

The reserve park served essentially as a distribution point for automobile sections whether these were equipped with camions for the transportation of personnel or matériel, or were sanitary sections for the evacuation of the wounded. The number of the sections depended upon the number of divisions in the army, its activity, and its liability to attack.⁵⁴

The reserve park, though a fixed organization, could be moved promptly. Especially was this true of its repair machinery. It was established generally at the railhead or at some point where easy rail transportation could be provided. All gasoline, tubes and tires, mail, food, and equipment passed through the French reserve parks. It was through these parks that the sections serving at the front were supplied with all the necessities for carrying on their work.⁵⁵

UNITED STATES ARMY AMBULANCE SERVICE PARKS

Attached to each French reserve park, if there were sections of the Army Ambulance Service on duty with the French divisions concerned, there was an American park or echelon.⁵⁶ This American park consisted at first of 1 officer and 15 men, furnished with automobile supplies and materials sufficient to keep in working order the sections dependent on the park, even if there was no mobile repair unit attached.⁵⁷ Later, as the work of the American parks increased, complete machine-shop truck units of the Motor Transport Corps, A. E. F., each consisting of one officer and a number of mechanics, with a complete machine-shop truck, were obtained and assigned to these parks. In each case the whole American organization was under the command of the Army Ambulance Service officer of the particular park.⁵⁸ There was also at each American park a reserve of two ambulances for each Ambulance Service section on duty in the army zone.⁵⁹

The revision park of the Army Ambulance Service was attached to the French revision park at Chalons.⁵⁷ As was the practice by the French system, all machines too badly damaged for repair either at sections or in reserve parks were shipped to this place by rail or camion, and here they were repaired or scrapped. A reserve of 50 ambulances was always on hand at this revision park. New ambulances might be requisitioned from it by reserve park commanders when any of their cars were completely destroyed.⁵⁷

ASSEMBLY PLANT

The assembly plant of the Army Ambulance Service, situated in Paris, took over part of the duties of the French *parc d'organisation* at Versailles.⁶⁰ At this point all ambulances forwarded from base ports and not destined for Chalons were set up and equipped with bodies before being sent to the front. However, before this was done they had to be matriculated (registered), either by special arrangement with the French or by passing through the park at Versailles.⁶⁰

MODE OF OPERATION UNDER THE PARK SYSTEM

An example of the ordinary procedure follows: Chassis of the ordinary Ford type, boxed, though poorly protected from the weather, arrived at one of the base ports. It was necessary that the chassis be unboxed immediately and set up, or that the crated cars be stored in a covered warehouse. Two plans were in operation for getting these chassis to Paris, or to the revision park of the service at Chalons, as the case might be.⁶⁰ One plan was to set the cars up immediately, strap on temporary seats, and drive them by road from the base port to the assembly and revision plant at Paris, which has been described in the headquarters organization. The other plan was to ship the crated cars by rail directly to Chalons where they could be set up, the bodies attached, and the ambulances completed in every respect by mechanics and men especially trained for the work. Most of the chassis arriving in France had to go by road to Paris, due to the immense amount of material of the American Expeditionary Forces which required rail transportation.⁶⁰

Before an ambulance left Paris it was sent to the French *pare d'organisation*, where it was matriculated into the French service—that is, a French number was painted on it—its motor number was taken, its description and pedigree were registered, and the driver of the car was given supply books which were to remain with the car wherever it went.⁶¹

From the *pare d'organisation* at Versailles the ambulance was forwarded to a reserve park, by road or rail, according to the conditions of traffic. From the time it entered a reserve park until it was issued to a section it was accounted for by the park commander to headquarters as “in condition” or “out of condition.”

When an ambulance was issued to a section, this fact was reported to headquarters and the car was taken up on the section reports.⁶²

PARKS IN OPERATION

The need for mobility in a park can not be overstressed. A park, like a section, might be called upon to follow up an attack or to retreat before one. A study of the military situation during the three pivotal months of 1918, with that of the rapid changes of location which occurred in the parks with both French and American troops, shows to just what extent mobility was of value.⁶³

During an attack a park was extremely busy. A great stream of cars, worn out, shot to pieces, or destroyed by accidents, came to it. In an active sector when division replaced division, and the attack continued for days and days, the work became gigantic in its proportions.⁶³ The constant strain on the men as well as on the transport made a breakdown seem inevitable. However, this did not occur, due to the elasticity of the system which had been planned for just such an occasion. When necessary, reserve cars and reserve men could be borrowed from a neighboring park, and all supplies could be replenished from the rear. In order to facilitate these procedures the chief of service, as well as the head of the transportation department, were frequently at the front during an action. Their presence insured rapid decisions and prompt action, and greatly promoted the successful overcoming of obstacles in extreme crises.⁶⁴

In March, 1918, the parks of the Army Ambulance Service were strung along the stabilized battle line at points where, unless an extreme advance came, they were safe. All organizations near the front were exposed to bombardments from airplanes, and, in the case of one park, to a long-range gun. However, they were reasonably peacefully settled and functioned without difficulty.⁶⁴ In the German offensive of March, 1918, only few of the Army Ambulance Service parks were concerned.⁶⁴ The Dunkerque park, because of its distance from the base and the overtaxed railroad between, now became hard to supply, but there was no other effect upon its service. At this time two new parks were established, one at Campteville, the other at Beauvais. These parks were subjected to heavy bombardment from airplanes, but were able to function with success, the one at Campteville supplying 20 divisions at one time during the counter attacks just after this period.⁶⁴

On May 27, 1918, the German Army began another great offensive, this time on the line between Soissons and Reims. Overwhelming the French divisions along the Chemin des Dames, the Germans advanced southward until on May 30, they had reached the Marne between Mont St. Pere and Brasles.⁶⁵ This attack was so sudden and successful to so great an extent that it was surprising that the Army Ambulance Service parks were able to move before it. Three parks were affected.⁶⁶ These had to move rapidly and with a great deal of judgment while retreating in order to continue to supply sections which they were serving. Vierzy, where park B was stationed, was captured, but there was practically no loss by the park either of ambulances or of other material.⁶⁶ From Vierzy park B moved to Coulommiers, which was under the guns of the enemy, but where it succeeded in functioning. Park D, which had been at Chalons, moved back for safety to Sarry in order to be relieved of exposure to the constant bombardment to which Chalons was subjected. Park E at St. Martin-Ablois moved without difficulty to Sezanne.⁶⁶

The German advance in May demonstrated to the Army Ambulance Service the necessity for keeping the equipment of the sections, as well as that of the parks, limited to what was absolutely necessary. Park and section commanders were cautioned to this effect, and the equipment, already light, was reduced somewhat. The hardest fighting was yet to come to the allied armies. In July occurred another German attack and then came the quick counterattack on July 18.⁶⁶

By that date the parks had again become more or less stabilized and had set themselves the work of keeping the sections equipped under a program applicable to long-continued actions. Each day brought other sections into the armies, for the service was increasing. The American divisions had asked for sections and these had been furnished, though the difficulty of supplying such sections was greater because of the lack of liaison between the Ambulance Service parks and the American divisions. This defect was afterward overcome.⁶⁷

With the counterattack on July 18, however, the whole situation proved different from that which had preceded it. A harder task had to be accomplished. It was more difficult to supply the advancing army, for it could not continue, as in trench warfare, to draw from conveniently located and fixed depots. Its supplies had to follow it.⁶⁷ Roads were jammed and there were priority of munitions, priority of engineer matériel, etc. Roads, which had been excellent during the retreat a few weeks before, were now full of shell holes, and this caused breakage of many springs and axles and other accidents. Also, the advance, by lengthening the lines of communications, impaired the maintenance of the close liaison necessary. By this time, ambulance sections were serving along the whole line, from the English Channel to the Swiss border. To supply them, to keep their cars in good condition, to get orders to them, and to maintain their high standard of individual efficiency became an increasingly difficult task.⁶⁷

Step by step, as the armies advanced, the parks moved forward with infinite pains, keeping in liaison with the sections they were supplying.⁶⁷ Each day meant some change, some new problem that had to be solved. There were telephone messages to headquarters in Paris, quick visits to the front, with instant responses to the rapidly changing conditions. Success made the whole organization appreciate its strength. Through August, with the reduction of the Chateau-Thierry salient, through September with the advance on all fronts, through the Argonne, in Belgium, over the Chemin des Dames, past St. Quentin, sections and parks kept up with advancing troops, the difficulty of supply ever increasing. By November, at the time of the signing of the armistice, almost every park had moved or was on the point of moving.⁶⁸

AMBULANCE SECTIONS

The organization of the Army Ambulance Service sections with the French army differed in a few minor details from that of the sections which served temporarily with American divisions during the operations of 1918.⁶⁹ Those serving with the American Army were planned by the chief of the Army Ambulance Service, for special use with American troops, and were made up of a strictly all American personnel, but their organization was based on the experience gained from the use of similar sections with the French army.⁶⁹ The equipment was practically the same for the two types, except that an additional touring car was allowed for each of the sections with the French Army for the French lieutenant, and a French truck, usually of a standard type, was provided for transporting gasoline. In general, what is said of a section serving with a French division applies with equal force to one serving with an American division.⁶⁹ The following tabulation gives the personnel in both the American and French sections:⁷⁰

PERSONNEL

AMERICAN SECTION		FRENCH SECTION	
Officers.....	1	Officers (American, 1; French, 1).....	2
Noncommissioned officers.....	4	Noncommissioned officers (American,	
Mechanics.....	6	3; French, 1).....	4
Cooks.....	2	Mechanics (American).....	4
Drivers.....	25	Cooks (American, 2; French, 1).....	3
Privates (extra).....	8	Drivers (American, 24; French, 2).....	26
		Privates.....	4
Total (enlisted).....	45	Total (enlisted).....	41

All other departments of the Army Ambulance Service were considered auxiliary to the ambulance section as this was the branch which directly served wounded. It was a development of four years of war, and was adapted to both trench and open warfare. This section must not be confused with the ambulance company or with the evacuation ambulance company of the American Army nor with the *section sanitaire* of the French Army.

Although based on the plans of the *Service de Sante* of the French Army, a section of the Army Ambulance Service was by no means the exact duplicate of the French *Section Service Sanitaire*.⁷⁰ The duty of such of our sections as were assigned to the American Expeditionary Forces was analagous to that of an evacuation ambulance company when it was serving armies or corps, and to that of the motor transport section of an ambulance company when it was assigned to a division.

ADMINISTRATION

The administration of a section was effected through several offices or departments.⁷¹

Department of personnel and paper work.—This department was under the immediate supervision of a sergeant, first class, and had to do with everything that concerned the personnel and paper work of the section.

Department of transportation.—The department of transportation was under the immediate supervision of the sergeant in charge of transportation. He advised and watched carefully the work of the mechanics, made inspections of materials, kept account of the expenditures of tubes and casings, inspected the general condition of the cars, made reports on transportation to the section office, investigated accidents and saw that reports were handed in concerning them, checked up on the number of kilometers traveled and on the number of wounded carried, made sure that the cars were filled with gasoline and oil, checked litters and blankets, and arranged for the washing and fumigating of cars.

Department of supply.—The department of supply was under the immediate supervision of the quartermaster sergeant, who was in charge of the supply of rations, gasoline, oil, grease, etc. He made out all requisitions for medical supplies, litters, and blankets. He looked after the clothes of the men and saw that they were properly supplied.

Department of food and sanitation.—The department of food and sanitation was under a sanitary sergeant, who also had in his charge that part of the duties of a mess sergeant which had to do with the preparation of food. Upon the arrival of the section in camp he searched out a good supply of water and chlorinated it. Lyster bags, for use in chlorinating water, were provided for each section. After this he arranged for latrines and established the kitchen. He inspected the kitchen and had under his supervision the whole kitchen force; the kitchen police and the cooks were responsible to him for the cleanliness of the kitchen as well as for the preparation of the food. He kept the medical kit. He reported on the general cleanliness of the camp and quarters.

EQUIPMENT

The average section had five different kinds of equipment, as follows: Transportation; spare parts and tools; paper and office work; medical; and individual.

The transportation of a section was as follows: 20 ambulances; 1 touring car; 1 two-ton truck; 1 three-fourths ton truck or camionette; and 1 rolling kitchen.

AMBULANCES

The ambulances used by the Army Ambulance Service were of the Ford type.⁷² The standard chassis, with a few changes and additions (none being radical), was adapted to perform the heavy work incurred in the transportation of wounded.

There were two types of ambulance bodies. One, the fiber body, modeled in America, according to specifications furnished at the beginning of the war, was not wholly a success. The other, made in Paris, was on the pattern of the old American Field Service ambulance body. This was made of wood and was excellently planned, so that it contributed to the comfort of the wounded men as well as to that of the driver. All ambulances were painted an olive-drab color.⁷²

TOURING CARS

The touring car was of the standard Ford type.⁷³ A few additions were made, such as tire racks, and an arrangement (generally by the use of three 5-liter bidons) for carrying extra gasoline. The touring car was painted the same color as the ambulances, and bore the number and insignia of the section. A red cross was sometimes painted on the windshield to facilitate the passing of sentries, and to obtain the priority of the medical service, which was granted to ambulances.⁷³

TRUCKS

Two kinds of trucks were used.⁷⁴ One, the $\frac{3}{4}$ -ton Ford camionette, was of the standard make. The other truck was usually of some well-known American make of from $1\frac{1}{2}$ to 2 tons capacity. The type most used was the White, while the Packard was a close second, with the Garford third.⁷⁴

ROLLING KITCHEN

Practically every section was equipped with a rolling kitchen.⁷⁴ Two types were used, one an inheritance from the American Field Service and the other a gift from the American Red Cross. The American Field Service rolling kitchen was a large boxlike kitchen, equipped with a good range and with shelves and drawers for rations; completely inclosed, it protected the cook from the weather. While many advantages were gained by this arrangement, it is believed that the weight of the vehicle lessened its value, especially during the very active period in the last year of the war. It was towed behind the larger truck, to which it was fastened by means of an apparatus which took up the shock.⁷⁴

The Red Cross kitchen was lighter and more practical for an army moving in the field.⁷⁵ It was planned from observations made by a member of the Army Ambulance Service, who was aided by the practical advice of men on active duty in the field. Perfected by the Red Cross, it gave excellent satis-

faction on every front. The oven and the arrangement for heating water were features not usually found in a field kitchen.⁷⁵

MEDICAL SUPPLIES

The medical equipment of a section was limited. Unlike that of an ambulance company, it included few bandages or medicines, and those supplied were intended primarily for the use of the section personnel.⁷⁶ The attending surgeon, early in 1918, perfected a medical kit, for the special use of the service, which could be used intelligently by nonprofessional men. Though the kit contained only the simplest remedies, it was an entire success. The litter which was part of the medical equipment was the French folding litter.⁷⁶ There were 3 litters to each car, or 60 to the section. The ambulances were planned to carry the litters of all the allies, though some trouble (later corrected) was experienced at first with the long-model truck litter.⁷⁷

With the litter were the two blankets used to cover a wounded man on his trip from the front to the rear. These blankets, generally of a good quality of wool, were carefully safeguarded and were considered a part of the ambulance equipment. Three extra gas masks were always carried in the ambulance, and on special occasions one or more French Tissot masks were added for the use of the driver during a heavy gas attack.⁷⁷

Each section was supplied with a regulation venereal prophylaxis outfit. An attendant, properly instructed and trained, administered the treatment and was responsible for the material as well as for the records. These records were inspected by Army Regulations. The percentage of venereal diseases was exceedingly small in the Army Ambulance Service.⁷⁷

INDIVIDUAL EQUIPMENT

The equipment of the individual soldier in the section was the regulation Equipment C, provided by Army Regulations.⁷⁸ In periods of great stress, this equipment was reduced to Equipment A, the surplus being stored at the parks for the time being. A supplement to the clothing allowance was made by certain additional garments, such as the leather jerkins, authorized by General Headquarters, American Expeditionary Forces. All of the personnel were equipped with the regulation French helmet and gas mask. Sections operating in the Vosges and other cold sections were furnished waterproof and sheepskin lined coats.⁷⁸

INSTRUCTION

Instruction in all phases of the work of the Army Ambulance Service was necessary and was amply provided for by means of various schools, such as the base camp school, *Centre d'Instruction Automobile*, Meaux; motor transport service school; and also by instruction in the ambulance sections.⁷⁹

EVACUATION OF WOUNDED

Transportation and care of patients in transit differed considerably according to proximity to the front and to other considerations. The first zone which

a patient traversed was the forward part of the advanced zone, and here transportation was accomplished by litter bearers. The second, just in the rear of the first, comprised the remainder of the advanced zone; through this the wounded were removed by motor vehicles. This part of the advanced zone began at the first-aid station, or the regimental dressing station (*poste de secours* of the French), and ended at the field hospital or triage. It was in this territory especially that the sections of the Army Ambulance Service usually operated.⁸⁰

In this part of the advanced zone the transportation of the patient under the French system was completely divorced from his treatment.⁸¹ Statistics have shown that while delay for treatment, or for any other reason, might mean comfort for some individuals it meant infection for a large number of others.⁸¹ Evacuation in this part of the advanced zone was exceptionally difficult, for it was here that the time factor was most variable, and it was here that contact must be maintained with the units served. It was found that a section should operate with one division, and should at no time be removed from the division to which it was attached, unless in the greatest emergency. Knowledge of the exact organization of a division and personal acquaintance with its sanitary service were of the highest importance to the efficient operation of a section. If frequently transferred from one division to another, it was impossible for the commander of a section to orient himself without great loss of time and under circumstances when no time whatever should be lost.⁸¹

In order to administer first-aid during transportation, access to the patient was necessary. Both the French and English ambulances at first had passages between the litters to facilitate treatment of patients en route, but this arrangement proved to be impractical, and was discontinued early in the war.⁸¹ It was found that, instead of aiding the patients, many cases of infection occurred as a result of interference with wounds in transit. The extra space which allowed access to the patient could not be spared when wounded had to be cared for in great numbers. The continuing stream of vehicles would not permit an ambulance to stop and thus block them all. As early as the winter of 1915, ambulances were completely closed and rules prohibited the treatment of patients en route except at special stations. The results proved the success of this method.⁸²

From experience on the Western Front, where delay of evacuation under normal conditions seldom occurred and the whole transport could be accomplished in perhaps two hours, it was learned that stations between the first-aid station and the field hospital, except for the sorting of wounded, were not practical.⁸² The dressing station of the American Army organization was but an additional stop which delayed the patient on the trip to the rear. It was believed that it was better to rush the wounded back to a formation where proper facilities for their treatment were available than to delay the transport by feeble efforts at treatment en route.⁸² Furthermore, the drivers, while enlisted in the Medical Department, were not trained in more than elementary first-aid work, and to have an ambulance section saddled with medical and

surgical equipment in addition to that of their cars was contrary to the dictates of efficiency.⁸³

It was found that the particular requisite for effective results was to have the drivers under the constant supervision of an officer trained for this purpose. This proved to be very difficult, if not impossible, in a command larger than the section. The difficulties would have been increased if there had been mounted, as well as dismounted, personnel, such as litter bearers, as is actually the case in ambulance companies.⁸³ It was believed very unwise to have mixed types of vehicles in an ambulance section. As each section of the ambulance service had one type of car, with one type top, so as to obviate having multiple stocks of repair parts and multiple tools and equipment, it was not necessary to depend upon different parks for different supplies and maintenance, nor was it necessary to have mechanics and drivers trained in the upkeep and repair of more than one type of car.⁸³

DUTY WITH FRENCH DIVISIONS

The duty to be performed by the sections serving with the French army was very definitely fixed. In the advanced zone, one section was assigned to each division of 10,000 fighting men. This section remained with the division while it was in line and went with it when it came out to rest. In no case was it detached, as was often done in the American Army; but, if applied for through the proper channels, it could be loaned to another division for an engagement.⁸⁴ The decision in this case rested with the *directeur, service automobile*, who considered the use to which the section was to be put and whether it was fit to go into another action.⁸⁵ This officer also controlled all movements of the section when in convoy; but upon entry of the division into the line, the allocation of the cars and their immediate supervision fell under the division surgeon.⁸⁵

While on active duty a little village was chosen for the headquarters of a section. The choice was based on proximity to the scene of its future work, and for this reason the location was almost inevitably in a destroyed village. From this point the section functioned through its *postes des secours*, where cars were stationed, or which they visited to collect the wounded. The distance between these *postes* and the *hospital d'evacuation* was never very great, but varied according to the front. For instance, a section serving with a division holding part of the line north of Verdun (Verdun being at the time a comparatively active area, with the divisions close together and each holding a short line) had a restricted geographical area for its operations. The runs in this case were thus comparatively short. The contrary was the case with divisions in less active sectors. In fact, the more active the sector the more wounded, but the shorter the runs; the less active the sector, the less wounded; but at the same time when the divisions concerned were less concentrated the runs were longer. Some sections evacuated only to the triage, at which point the wounded were picked up by the larger cars of the French ambulance sections, while in other instances the sections of the Army Ambulance Service evacuated all the way to the *hospital d'evacuation*.⁸⁵

SERVICE OF THE ENTRENCHED CAMP OF PARIS

In addition to front line duty with French combat divisions, it was agreed between the French and American authorities that the ambulance service of the entrenched camp of Paris, which had previously been carried on by volunteers attached to the *Ambulance Americaine* at Neuilly, should be assumed by the United States Army Ambulance Service.⁸⁶ Accordingly, when the first contingent of 20 sections arrived in France, two sections (this was on September 16, 1917) were ordered overland to Paris to take over this service.⁸⁶ They, with two other sections which were destined for the base camp, arrived in Versailles September 18, 1917, establishing what is believed to be an enviable record for convoy work with inexperienced drivers. This convoy was composed of 80 ambulances, 8 trucks, 4 touring cars, and 4 motor cycles. About one-half of the drivers had never driven a car at the time of their leaving the camp at St. Nazaire, but despite this and running as a solid convoy, the detachment reached Versailles on time, the convoy complete without losing a car or having to tow one. The last car drew into line 20 minutes after the pilot car had stopped. The two sections, which were intended for Paris, reported to the American Red Cross Military Hospital No. 1 (*Ambulance Americaine*), Neuilly-sur-Seine, and immediately took over the duties of the old volunteer organization.⁸⁶ (About 30 men from the old volunteer service were still on duty at this hospital, and, desiring to come into the new service, were enlisted and organized into a third section.) Service here was concerned primarily with the evacuations of French sick and wounded from the large unloading stations in Paris to which points they had come by hospital train or by boat from the hospitals in the zone of the armies. Later, however, the Paris sections were used extensively to evacuate all allied wounded arriving at that city. During the German drive to the Marne in 1918, 40 of the ambulances of the Paris detachment were sent to evacuate wounded from points as far as 50 kms. (31 miles) from Paris. The Paris detachment at this time numbered 250 drivers and had 165 ambulances of the large type, carrying 4 lying or 6 sitting cases each. The organization was designated "The Provisional Battalion," having a captain in command of the battalion and a first lieutenant in command of each of the three sections. In Paris, during the volunteer days from September, 1914, to August, 1917, 50,195 cases had been transported; from September, 1917, to November, 1918, inclusive, the provisional battalion, United States Army Ambulance Service, transported 132,683 cases.⁸⁶ The number of wounded carried climbed from 766 in September, 1917, to a total of more than 30,000 during the month of October, 1918. These figures include a number of air raid casualties and German long-range gun ("Big Bertha") victims, resulting from the 1918 attacks. The provisional battalion, during the late days of the war, was moved to the Long Champs race course and detached from the American Red Cross Military Hospital No. 1, Neuilly. Gasoline and tires for Paris were furnished by the French Army as was the case for the rest of the Army Ambulance Service.

From time to time, sections on Paris duty were replaced by recently arrived sections from the United States and sent to the front for duty with the French divisions, the service for which they were originally organized and intended. This relief of sections prevented the tiresome and onerous duty in Paris from becoming any more so.⁸⁶

DEMobilIZATION

Within five months after the signing of the armistice, over one-half of the United States Army Ambulance Service had been demobilized, and plans had been made for the demobilization of the remainder.⁸⁷ Yet the work of the sections by no means ended on November 11, 1918. Many of the sections moved into Germany and some crossed the Rhine with the French army of occupation. But within a few months it was possible to call in those which had accompanied French divisions into Germany. They were replaced by new sections which had arrived in France late in November. Through such replacement it was possible to arrange that all sections which had seen war service were assured of a speedy return to America. Plans were also worked out with the French so that the new sections were relieved by French "Regular Army" units late in the spring of 1919, allowing even the sections which had come over after the armistice to return before midsummer of that year.⁸⁷

Plans for demobilization were made so that all preparations for transport to America and for discharge were made within the ambulance service itself. The base camp proved to be a place ideally fitted for demobilization purposes, and it was there that the sections from the front were prepared for discharge. Ambulances, however, were turned over locally to the Motor Transport Corps of the American Expeditionary Forces, which corps also took over all the other transportation of the ambulance service.⁸⁷

Sections, relieved of their automobile equipment, arrived at the base camp with only personal property and the section records. Here the men were put through the disinfesting process and issued standard Medical Department equipment.⁸⁷

All individual records and section records were straightened out at the base camp at the same time the men were being put through the various processes prescribed for all units previous to embarkation. When the sections left the camp, they did so with a clean bill of health and with all the section funds and records attended to. Here, efficient work by sections was in great measure responsible for the smoothness with which the ambulance service's demobilization program worked out in conjunction with the embarkation system of the American Expeditionary Forces.⁸⁷

On January 30, 1919, it was announced that 10 sections would be sent home in February and 20 sections each month thereafter until the whole service had been demobilized. Before the end of March, 56 sections either had gone through the base camp, homeward bound, or they were ready and awaiting transportation at Brest. Demobilization was hastened very largely because it was apparent that the sections could be prepared for going home

much more quickly than had been expected. The real need for them at the front had ceased as soon as the French demobilized their temporary divisions and were thus enabled to handle their own transportation problems to a much greater extent than had previously been the case. After the middle of April, 1919, no sections remained in the field that had seen service at the front previous to the signing of the armistice. The newer sections continued to serve until May, most of them being located with the French divisions along the Rhine. The character of the work changed after the armistice, sickness being practically the sole cause for evacuation.⁸⁷ With the lessening of the need for transportation of patients it was now possible in some cases for one ambulance section to do the work for two divisions. Withdrawal from the French Army was carefully carried out by the sections, and in no case was interruption in the transportation of patients permitted to occur.⁸⁸

Many of the men who entered the Army Ambulance Service in France took advantage of a general order which permitted them to be discharged in Europe.⁸⁸ These men, with their completed records, were sent from the base camp to the St. Aignan discharge camp. As a matter of fact, the old volunteer sections all had a limited number of their original personnel still in the service when they arrived at the base camp, and many of these men desired to stay in Europe. Relatively, more men in the United States Army Ambulance Service were affected by the order permitting discharge in Europe than was the case with any other organization of the American Expeditionary Forces.⁸⁸

The first contingent to leave for America sailed from Brest on March 15, 1919.⁸⁸ Ten sections, five of them from the first Allentown units and five more from the old volunteer service, were included in this contingent. They were those numbered: 501, 509, 546, 586, 594, 627, 629, 631, 635, and 642.⁸⁸

The second returning contingent, composed of the following 10 sections, left Brest only 5 days later, on March 20: 517, 523, 539, 551, 558, 592, 593, 628, 630, and 641.⁸⁸

On March 26, a contingent, composed of the following 14 sections, left the same port: 504, 510, 512, 525, 552, 553, 625, 626, 632, 633, 634, 636, 638, and 646.⁸⁸

The remainder of the veteran sections sailed in contingents varying in size from 10 to 25 sections, and all were out of France before the end of April, 1919.⁸⁸

Parks were called in as rapidly as the decreasing number of sections at the front permitted, and their personnel was sent back with the returning sections. The chief of service effected arrangements whereby the remaining repair parks would be disbanded at the same time their sections were released from divisions. The Chalons park was the last to be discontinued, for because of its advantageous location, it afforded excellent repair facilities to sections en route to the base camp for demobilization.⁸⁸

As previously stated, after the veteran sections had been released, it was found that it would be possible to demobilize the new sections, which had been utilized to replace the old ones, earlier than had been previously

scheduled, so this was done. Ten of these sections were released on April 25, 10 on May 1, and the remaining 10 on May 5. This permitted the United States Army Ambulance Service to be practically out of France by the last of May, 1919.⁸⁸

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CHAPTER VII

PRIMARY EVACUATIONS FROM THE ZONE OF THE ARMIES

The transport and hospitalization of the sick and wounded of the American Expeditionary Forces, after these sick and wounded had been evacuated from the zone of the armies, presented difficulties which differed in many respects from those which had confronted the French Army during three and a half years of warfare, and also from those of the British, whose system of evacuation was similar to that of the French though modified by geographical conditions. The French and British systems involved no long lines of communications to home ports. The short route to England made it possible for British wounded to reach home bases rapidly.

The American Army, however, was compelled to hospitalize in France, and to some extent in England, almost all its sick and wounded, since it was impracticable to send home any except a relatively small number, who were permanently (from a military viewpoint) disabled. To meet the needs imposed by this situation and to economize on personnel and matériel, the American Expeditionary Forces had recourse to the use of large hospitals and hospital groups into which patients could be received by the trainload. These organizations necessarily were situated on supply lines of the American Expeditionary Forces.

HOSPITAL TRAINS

The plan in question involved long hauls as patients were moved from the front into variously located base hospitals, and early in the history of the American Expeditionary Forces it was appreciated that ample hospital train service was one of the prime requisites of a successful evacuation service. The method for the procurement of hospital trains for the American Expeditionary Forces has been given briefly in Chapter I. Being sanitary formations, hospital trains were under the general jurisdiction of the chief surgeon, A. E. F., as regards personnel, supply, and maintenance of their equipment, but they were under the orders and immediate control of the regulating officer to whom they were assigned,¹ save for those operated in the Services of Supply, which remained under the immediate control of the chief surgeon, A. E. F.

REGULATING STATIONS

Our regulating stations were modeled on those operated by the French when the United States entered the war, and their methods were modified little if any by us. To a degree, one of these stations corresponded to a division point with a train dispatcher according to American railway service practice, and also to a collecting and distributing point for supplies. Each

of these was a large railway yard, situated preferably at a railway junction where railroads converged from the rear and diverged to the front. Here cars were received and assembled into trains for the divisions, securing to

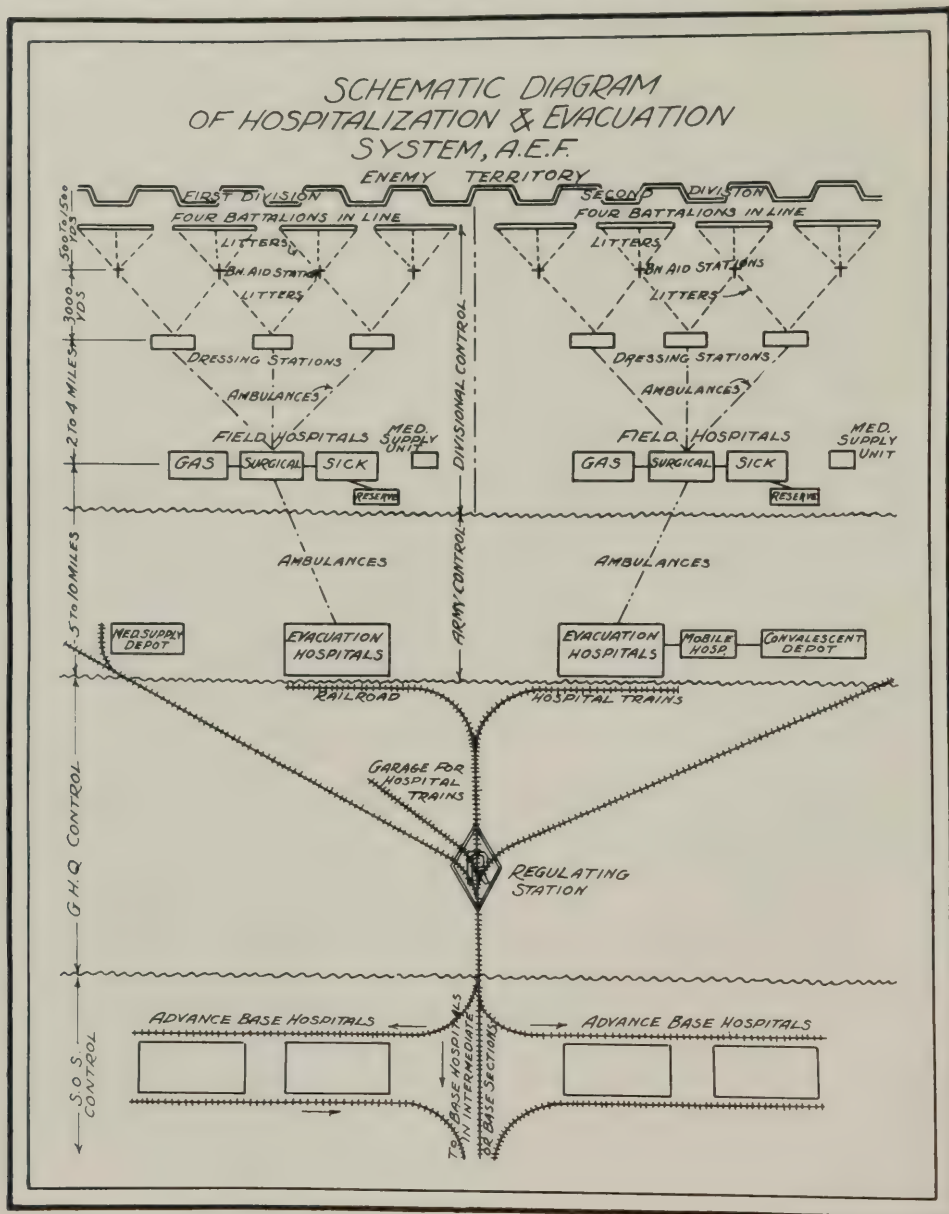


CHART II

each of these its daily automatic supply and providing for its emergency needs as well. Through such stations passed all the men, supplies, and animals needed by the army which they served, and, in retrograde movement, all men, matériel, and supplies evacuated from it.² These stations were the funnel.

RAILWAY EVACUATION ROUTES A.E.F. FRANCE

Scale in Kilometers
0 100 200



Red lines represent American routes of evacuation
Drawn from French Railway Map of France

1111

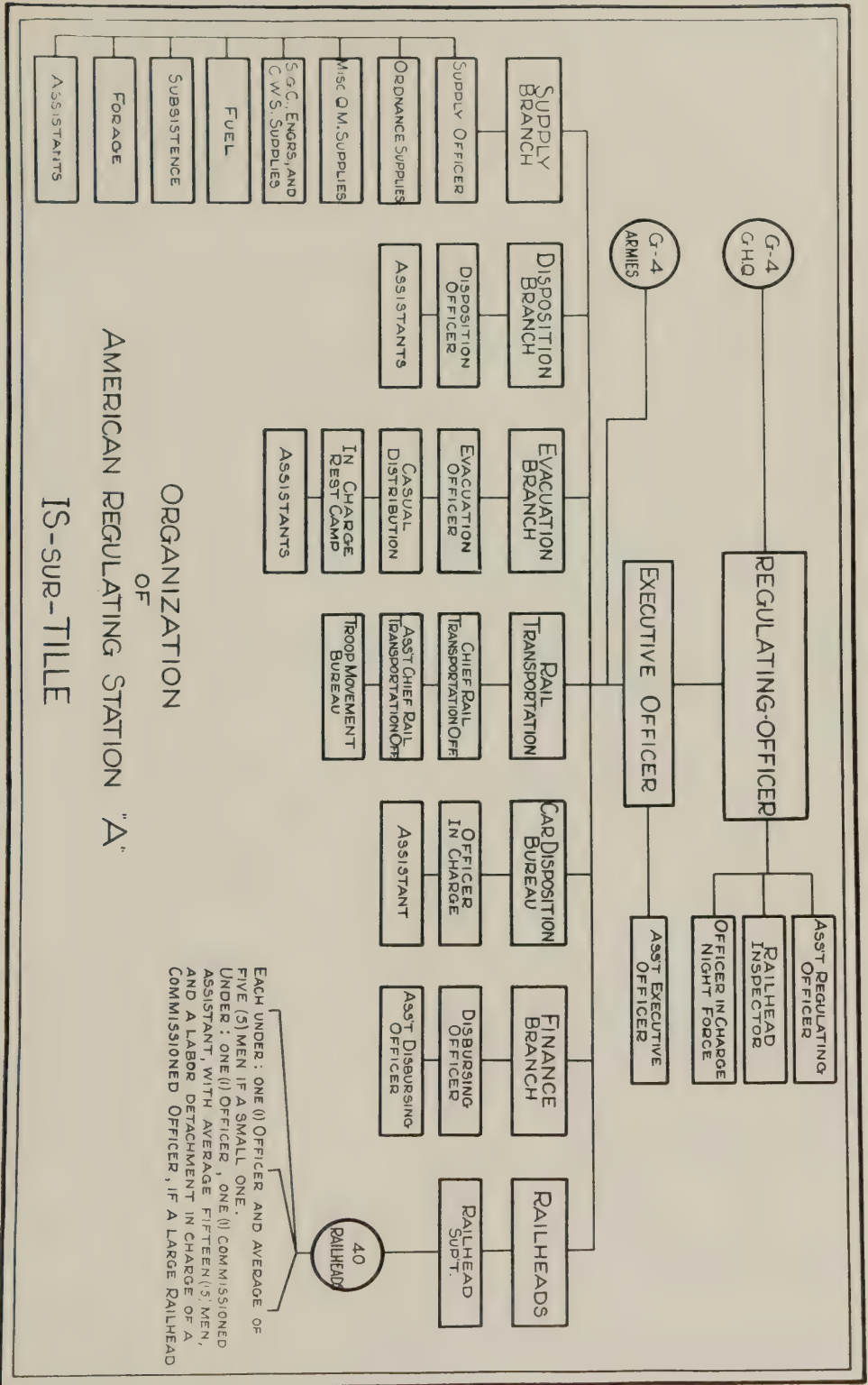


CHART III

so to speak, through which passed everything, or, to change the figure, they were the valves controlling and directing the flow through appropriate channels. They permitted the maintenance of depots and hospitals at a safe distance to the rear, yet secured to troops sufficient supplies to meet daily needs, and relieved them of their sick and wounded. The main purpose was to meet changing conditions at the front and to move speedily backward and forward with the army. Thus, in the early part of the war, during the retreat of the French and the first battle of the Marne, one regulating station on the left of the French Army jumped backward four times and forward twice.³

Only two regulating stations were actually constructed by us, viz, at Is-sur-Tille (Cote d' Or) and at Liffol-le-Grand. The latter was not completed until after the signing of the armistice. In addition to these, however, we used the French stations at Creil and Le Bourget during operations along the Marne, and later those at Nantes, Noisy-le-Sec, St. Dizier, Connantre, Grey, and Dunkerque.²

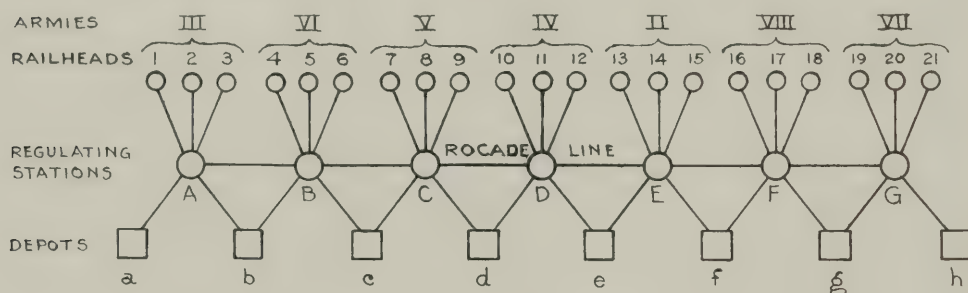


CHART IV.—Supply-control installation of French Army in the winter of 1917-18

The subjects of supply and evacuation, in reference to regulating stations, are so intimately connected that the two will be discussed together. Both were under control of G-4, the supply, coordinating, and evacuating section of the general staff, G. H. Q. (See Chart III.)

At the time of greatest activity at the front, when demands upon G-4 for supplies, particularly for ammunition and engineering material, were the heaviest, the demand for hospital trains for evacuation of the wounded also reached its highest point. It was essential, of course, that forward movement of the necessary supplies and rearward movement of the disabled should not result in hopeless confusion. For this reason both these responsibilities were charged on the same division of the general staff, and the regulating office was immediately under its control.²

Chart IV illustrates the supply-control installation of the French Army in the winter of 1917-18.³ It was the model we used both for control of supplies and for hospital train service, since both operations necessarily were over railway lines under French control and operation and, in addition, evacuations were conducted to a considerable extent on trains rented from the French.

In this chart Roman numerals represent armies; the Arabic, railroads. Capital letters represent regulating stations. Each small letter represents a

group of depots. The straight lines represent railroads. The railroad "A"—"G," connecting regulating stations, represents a rocade (shuttle) line.

Operation of this installation can be illustrated as follows: If division No. 1 moves to the position No. 3, the regulator at "A" switches its supply trains to No. 3.

If division No. 1 moves to the position No. 6 while its supplies are at "A," the regulator at "A" sends its supply train over the rocade line to "B," who switches it to No. 6.

In a like manner supplies could be switched from No. 1 to 21.

The rocade line made supply very flexible. By its use any railhead could be reached from any regulating station or from any depot, and this proved a valuable agency for rectifying mistakes, for any shipment missent to a regulating station could be directed to its proper destination by the rocade line. It was especially useful in an emergency.³

Intensive use of railway lines in the zone of the armies made clocklike regularity in their train service essential, and this regularity of movement had constantly to be coordinated with changing battle conditions.² As intelligent priority also had to be established, the authority for this was vested in the regulating officer, who received all calls from the armies for supplies and transportation and made the necessary requisitions on depots toward the rear. In order that shipments, both front and rear, might be controlled absolutely, they were made to pass through the regulating station yard, where they were checked, recorded, and their destination verified. The regulating station was thus a checking point upon the number and kind of cars and the personnel and freight carried. Being thoroughly conversant with the military situation and needs for supplies and evacuation, the regulating officer could route trains or change their composition as conditions required.²

Under G-4, G. H. Q., the regulating officer was charged with delivery of supplies of all kinds to units at the front and also with the duty of relieving the army of matériel, men and animals no longer in use. Being in close touch with our high command, G-4, G. H. Q., of necessity had full knowledge of all plans and projected operations and was therefore in a position to estimate the approximate number of casualties to be expected in the different sectors of the front, and consequently could allot hospital trains in a way best calculated to meet the situation. In point of fact this was effected through the Medical Department subsection of G-4 (G-4-B) during the entire period of the war. The trains available were apportioned to the different regulating stations and, once assigned, could be changed only by order from General Headquarters. Each having been assigned the number of trains which a particular situation demanded, regulating stations were in a position to meet the requirements of G-4 of the several armies.³

The agencies primarily concerned in evacuation were the evacuation hospital (an army formation), G-4 of the army, the regulating station, G-4, G. H. Q., and hospital trains.³

When American divisions served in French armies in the early part of our participation in the war it was the practice for the officer in charge of

an evacuation hospital to notify the chief surgeon of the French army in whose zone his hospital was located, that American evacuation was desired. The latter then requested the coordinating officer, at the head of the fourth bureau of the French general staff controlling the zone, to summon a hospital train. When our troops were incorporated in French corps and armies, we necessarily followed their method, but after we organized our own corps and armies, with independent supply and evacuation, it became the duty of an American regulating officer, who was attached to the office of the French regulating officer and allowed to have an assistant to himself solely concerned with the movement of hospital trains.⁴ The two sets of officers, French and American, worked side by side in the same station, our regulating officer making his requests on the French for the actual movement of trains. The French regulating officer, similarly to the American, had on his staff a French medical officer who was charged with control and supervision of hospital trains movement.

To promote the service of the regulating station the regulating officer divided his duties among several subdepartments, each under an officer responsible for his own department. The chief was responsible for the work of all and for its coordination. To carry out this plan so far as the Medical Department was concerned an officer of the Sanitary Corps was assigned to duty with the regulating officer at Le Bourget and was charged with the movement of hospital trains.⁵ As requirements increased, it became evident that a medical group should be organized in every regulating station to control the movement of hospital trains and to keep records and other data concerning evacuations. The Medical Department subsection of the regulating office was governed by the following instructions issued by G-4, G. H. Q., August 29, 1918, giving in full the plan of evacuation by train:⁶

1. Hospital trains are Medical Department organizations. As regards personnel, matériel, supply and maintenance of their equipment and disinfection, they are administered under the direction of the chief surgeon, A. E. F. As railway units they are operated under the direction of the officer to whom they are assigned, and are repaired by the Transportation Service.

2. Assignments of hospital trains are made by G-4, G. H. Q., to regulating officers and to the T. M. B. at headquarters, Services of Supply.

3. An officer of the Medical Department will be assigned to each regulating station as part of the staff of the regulating officer and as a representative of the chief surgeon to whom commanding officers of hospital trains assigned to that station will be directly answerable in matters pertaining to Medical Department administration. He will be charged by the regulating officer with the duty of seeing that trains are at all times ready to answer calls and are kept properly provisioned and stocked.

4. The chief surgeon, A. E. F., will allot a requisite number of beds daily to each regulating officer, advising him by telegraph as to their number and location. These beds will be reserved for the exclusive use of the regulating officer to whom allotted, and daily notice of any changes in these credits will be furnished him. In all questions arising as to bed credits, their sufficiency, etc., the chief surgeon and regulating officers are authorized to communicate direct. The latter will assign destination to hospital trains, in accordance with the information furnished, as provided for above, and the traffic conditions at the time of evacuation. Information regarding transportation or combat conditions which might affect the allotment or location of beds reserved for him will be promptly communicated to the chief surgeon at headquarters, S. O. S., by the regulating officer.

5. G-4, Army, will furnish the regulating officer daily with all data bearing upon evacuations in order that the latter may judge the sufficiency of trains and beds at his disposition and take the necessary steps to correct a shortage in either.

6. Evacuation hospitals will report daily, or as often as may be necessary, to G-4, Army, the following information:

- (a) Number of evacuable wounded, sitting and lying cases.
- (b) Number of nonevacuable wounded.
- (c) Number of evacuable sick, sitting and lying cases.
- (d) Number of nonevacuable sick.
- (e) Number of vacant beds.

EVACUATION FROM ZONE OF THE ARMIES

7. G-4, Army, considering the data furnished him as provided for in paragraph 6, together with such information regarding intended operations as might have a bearing on the evacuation situation, calls upon the regulating officer for a hospital train, giving station and time it is desired to have the train placed. He will at the same time advise the commanding officer of the evacuation hospital concerned of the action taken.

8. The regulating officer upon receipt of a call from G-4, Army, for a hospital train will assign a train and arrange a necessary schedule, advising the evacuation hospital and G-4, Army, of the probable time of arrival and the period of time allotted for loading. The commanding officer of the evacuation hospital will be charged with seeing that the necessary steps are taken in order that the train may be promptly loaded in the time allotted.

9. The regulating officer will notify the commanding officer of the receiving hospital of the contents of each train, showing the number of officers, soldiers, and enemy prisoners; number of sitting and lying patients; the number of contagious cases; together with any other information which would facilitate unloading the train.

10. When American troops are operating in conjunction with French units and not under G-4, Army, information as called for in paragraph 6 will be communicated directly to the fourth bureau of the French army with which the American units are serving. This bureau will call upon the French regulating officer for the necessary evacuation, and the latter will, in consultation with the American regulating officer, arrange the schedule and dispatch the train.

EVACUATION IN ZONE OF THE REAR

11. Evacuation from hospitals in the rear of the zone of the armies will be provided for by the T. M. B. at headquarters, S. O. S., in accordance with requests made upon him for this purpose by the chief surgeon, A. E. F.

Of the foregoing instructions, an especially important item was this notification to the evacuation hospital of the time allowed for loading, for failure to complete this in the time specified prevented the train moving out on schedule and resulted either in disturbing the movement of other trains or in holding the one directly concerned until another schedule could be arranged.

Later, these instructions were modified in some details, but only one need be noted here, the others being of minor importance. It was found that in periods of great activity at the front, communication between evacuation hospitals and G-4, Army, and between the regulating officer was difficult and often much delayed through the urgent demands on the limited telephone and telegraph lines which were available. Authorization was therefore given to modify the mechanism of evacuation by permitting hospitals to communicate direct with the regulating officer.³

In order to perform the duties with which it was charged, it was necessary that the medical section of the regulating office should know, first, where—i. e., in what evacuation or other army hospital—there were patients to be evacuated, together with the number, and, second, in what hospitals of the Services of Supply there were vacant beds for patients, and the number of beds in each of these hospitals available for the several classes of patients. For the former regulating station received as often as necessary, by telephone or telegraph from the hospitals it served, appropriate information concerning number and classification of those to be evacuated, and the possible moment of all such movements.³ On occasion, the evacuation officer called for extra trains, though a need had not been shown by figures last reported by him. During the Meuse-Argonne operation, trains were sent regularly, irrespective of call, to each evacuation center; e. g., two by day to Vadelaincourt, four by day and two by night to Souilly, Froidos, etc., and these were supplemented by other trains when reports of evacuable showed that additional trains were needed.

The destination of a train was determined as follows: To each regulating station was allotted, according to its needs, a certain number of beds in specified hospitals or hospital centers of the interior. Daily, or twice daily in periods of activity, each of these hospitals telegraphed to the regulating offices the number of vacant beds remaining—medical, surgical, etc.—the telegram giving also the number of the last hospital train received at the particular hospital. This information having been charted, it became a simple matter to deduct from the number of vacant beds shown on the last report the number of patients subsequently sent and thus to determine the number of vacant beds actually available.³

In selecting the destination of a train the medical regulator also considered the kind of cases to be evacuated; i. e., he sent medical cases to a medical base hospital, surgical cases to a surgical base hospital, and so on. To hospital centers he could usually send all the classes of cases.

Preoperative trains were supplied as required to relieve overtaxed evacuation hospitals and then were dispatched to the nearest base hospital. Their use rapidly diminished as operative technique and administrative methods were perfected, evacuation of preoperative cases falling from 11,370 in the first phase of the Meuse-Argonne operation to 293 in the second phase.⁷ Postoperative cases usually were sent on American trains to base hospitals in the intermediate and base sections. Mixed trains were necessary at times for preoperative cases, but the development of evacuation centers did much to obviate the necessity for resorting to this undesirable expedient.

As soon as trains were called for, destinations and schedules of marches for them were arranged with the railway technician. The regulating officer telephoned the evacuation hospital or evacuation officer concerned, giving the exact load for each train, the number and type of cases, time of arrival and departure of train at loading point, destination and stops at other evacuation points—in case there were any—and directed the number of rations to be put

on the train when rations were necessary. In case other evacuations were to be made farther along the route, each evacuation point or collecting station was notified in the same manner.⁸

Ration orders for American trains were usually unnecessary, as these trains commonly carried a supply of 2,000 rations and replenished them as a routine matter; but French trains routed by the American Expeditionary Forces frequently needed rations. When required, they were drawn for the train by the evacuation officer from the railhead officer nearest the loading point.⁹

The regulating officer confirmed by telegram his telephone call to the hospitals or evacuation officer. He also sent telegrams concerning train movements and evacuations to the following: G-4, hospital evacuations, army; commanding officer of base hospital at destination; other regulating officers through whose areas trains moved; statistical department, adjutant general's office, G. H. Q., and chief surgeon, A. E. F. A copy of each telegram sent to the evacuation officer or commanding officer of hospital was given to the commanding officer of the train concerned.⁹

The evacuation sending hospital took necessary measures for loading a train in the allotted time and with only the number of patients and the type of cases prescribed by the regulating officer. If this course was not adhered to closely, considerable delay and probable suffering ensued, as a train sometimes was scheduled to stop for a second or third evacuation convoy and space had to be reserved. Then, were a train to be loaded with other classes of patients than those designated in orders, the base hospital at destination might not be equipped for their care.⁹

During inactive periods collecting patients from two or more evacuation centers was possible, but the total loading time from all evacuation centers was not allowed, as a rule, to exceed four hours, including time spent en route from one loading point to another.⁹

The regulating officer kept the chief surgeon, A. E. F., and G-4, G. H. Q., informed daily concerning the number of available beds allotted to him after all his trains were dispatched.⁸

The army surgeon consulted the regulating officer concerning the location of proposed train evacuation points. Reconnaissance of such points was made by the regulating officer in conjunction with the evacuation officer of the army and the railway technician when an important movement of the army was contemplated.¹⁰

The regulating officer was charged with the responsibility of making suitable provision for keeping trains properly stocked and provisioned at all times. When trains were garaged at points distant from the regulating station it was necessary to convey food and matériel to them by trucks from the depot of the station concerned.¹¹

The regulating officer established a hospital train depot at some convenient point where trains stopped in passage. Here they were supplied according to their needs. This depot carried, among other things, special diets, medicines,

comforts, and the like. Personnel, food, coal, mail, packages, and articles of train equipment arriving at the regulating station for distribution to hospital trains were sent to this depot. When trains were garaged at points where the services of no such depot were available and whence they would not pass a depot, rations were drawn from the nearest railhead officers under the direction of the regulating officer.¹¹

Trains arranged for the exchange of litters, blankets, and other supplies at base hospitals to which they carried patients, as directed by the chief surgeon, A. E. F.¹²

ORGANIZATION OF MEDICAL SERVICE AT A REGULATING STATION

The following detailed description of the Medical Department organization at a regulating station is derived from the Medical Department historical report of the station at St. Dizier, which handled more patients than did any other, and the history of which is most complete. The general organization of the medical service there will be considered first, before discussing in detail the routing of hospital trains and the office technique by which this was effected.

Personnel of the Medical Department at a regulating station was charged, under the station's commanding officer, with the operation of hospital trains, maintenance of the station hospital and infirmary and emergency medical supply dump, control of any local Medical Department reserve replacements, care and operation of medical motor transport, and sanitary supervision of the area.

The senior officer of the Medical Department present, known as the medical regulator, was in charge of the movement of hospital trains and supervised other Medical Department activities pertaining to the station. He discharged his most important duty—operation of trains—in conjunction with the railway technician. In order to facilitate this, the train movement bureau which was maintained in the medical regulator's office at St. Dizier was divided into three parts: (1) Evacuation and movement of hospital trains; (2) record of bed space available at the rear; and (3) personnel and supply service for trains.¹³ The medical regulator was in constant touch with the army surgeon, the latter conferring with him on the selection of sites for evacuation centers in so far as their railway facilities were concerned. Similarly, he was in liaison with the chief surgeon, A. E. F., who allotted bed credits in various hospitals to the rear, with the commanding officers of hospitals which made evacuations, with the evacuating officers of evacuation centers, and with the railway technician. This medical regulator was responsible for the efficiency of evacuation to the commanding officer of the regulating station, to the Medical Department representative with G-4 (G-4-B), and to the chief surgeon, A. E. F.¹³

The assistant to the medical regulator also had certain definite responsibilities. While his chief was occupied largely with general supervision and liaison, the assistant's interests were more local. He received reports from evacuation hospitals and of daily bed allotments in the rear, supervised

(with the railway technician) the movement of trains, making request of the regulating officer in command of the station for movement of these as needed, and cared for the proper transmission of all orders, telegrams, and instructions, and the formulation of records. He carried out the orders of his chief and his general policies as determined by the strategical situation at the front and hospitalization at the rear. When day and night service was necessary he alternated with his chief in 12-hour shifts. He had as technical assistants a sergeant who was in charge of office routine, a corporal who received, listed, and kept up to date the daily bed allotments, and two army field clerks who attended to telegrams and general correspondence.¹³

The hospital train supply officer was in charge of the distribution of the matériel shipped to these units in care of the regulating officer and had supervision of the medical supply depot if one were organized at the station. Such a depot was stocked with rations, special diets, blankets, and miscellaneous medical supplies, and met emergency calls for supplies from the hospital trains and from sanitary formations in the regulating station district. This officer also had charge of the laundry exchange for trains operated by the depot, distributed mail for hospital train personnel, and issued proper orders concerning individuals on duty with trains. In short, his duties were similar to those of an adjutant, personnel and supply officer combined. He was assisted by a supply sergeant, two privates, and details as required from the casual camp. He delivered by Medical Department truck all supplies required by trains and the mail of those on duty with them.¹⁴

The total personnel on duty with the hospital train movement bureau at St. Dizier was 3 officers, 2 field clerks, 3 noncommissioned officers, and 5 privates, including a chauffeur who drove the supply truck and the motor car assigned to the chief of medical service for his use in visiting hospital trains garaged at a distance from his office and depots established at railhead for hospital trains.¹³ This personnel dispatched 528 hospital trains carrying 196,018 patients from September 5 to December 1, 1918.¹⁵

The station hospital constituted a small evacuation unit for the hospitals of the district, and provided needed accommodation for those on duty at the station. It was located near the railroad and the casual camp. Usually its personnel was small—3 officers, 2 nurses, 4 noncommissioned officers, and 10 privates—and it accommodated only 100 patients. An infirmary was operated in connection with it, which received from hospital trains patients unable to continue the journey and sent them to hospitals in the district. At St. Dizier the infirmary had 106 beds and a personnel of 2 medical officers, 4 nurses, 4 noncommissioned officers, and 16 privates; it also treated casualties and detachments in the regulating district but not attached to the station.¹⁵

A Medical Department replacement depot for the Army, the regulating station, and the train service was considered advisable, this to be located in the regulating area, but no record has been found showing that such a depot was established.

The motor transport of the station consisted of 1 touring car, 4 ambulances, and 1 one and one-half ton truck.¹⁵

One or more sanitary squads attached to the station supervised sanitary conditions, including the establishment of prophylactic stations, care of water supply, construction and maintenance of disinfecting stations, refuse-disposal plants, and kindred activities.¹⁶

ROUTING OF TRAINS

Supplied with information concerning bed credits, the medical regulator could make immediate choice of routes, the greatest latitude being allowed him in this matter and in the selection of the destination of patients subject to bed credits. It was greatly to his advantage to have hospital credits widely scattered geographically, as this arrangement allowed the use of the least congested routes and the fastest schedules, but this advantage had to be weighed carefully against possible disadvantage to patients. The problem was thoroughly worked out by the medical regulator, who took into consideration the type of sick and wounded; that is, whether the cases were pre-operative or not, the length of time which must elapse before they could be got to a hospital, and the hospital accommodations at destination. Consideration was given also to the hospital personnel available—whether or not it was adequate to meet the situation and also whether it was being overworked. Unless the number of such personnel justified the eight-hour shift system, the arrival, one after another at close intervals, of hospital trains carrying sick and wounded, would break down any hospital, regardless of its bed space.¹⁷

Another consideration in routing trains and in selecting their destination was their adequacy in number. In times of great emergency at the front, e. g., during the Meuse-Argonne operation, hospital trains were always short of the number needed. If, under these circumstances, the medical regulator had beds available at Bazoilles and Bordeaux and at several intermediate points, he first sent his trains to hospitals at the former place because it was nearest, the round trip to Bazoilles taking less than 24 hours, while the round trip to Bordeaux consumed several days. French trains were more commonly used near the front, as they could be garaged more easily, did not need such long loading quays, and their accommodations were more suitable for short trips; while the heavier, larger American trains carried patients farther toward the rear. As a matter of fact, in the early part of the Meuse-Argonne operation, prior to October 15, American trains were employed chiefly in moving patients from hospitals in the advance section to those in the intermediate and base sections.

The strain upon hospital train service was aggravated by the fact that large numbers of slightly sick and wounded men who should have been retained in the army zone were sent to the rear. They had slipped through triages and field hospitals at a time when pressure was so great that they could not be given more than the most casual examination there and had been given the benefit of any doubt as to their condition. Then, when these patients once reached evacuation hospitals there was no place to which to send them except to the base hospitals.¹⁷

During the Meuse-Argonne operation, when a constant succession of supply trains was moving through the regulating station at St. Dizier, and when 67 hospital trains were in constant service, there was never a time when rearward movement of the latter was obstructed by railway congestion, although there were many occasions when the shortage of engines and hospital cars caused the deepest anxiety. So heavy were the demands made upon hospital trains that at this time the French complained that their technical railway personnel had no opportunity to inspect or to oil and make minor repairs to the rolling stock borrowed from them, and that they feared breakdown of the evacuation service if demands did not lessen soon. Fortunately, the armistice followed very shortly.³

In the following discussion the term "train" is sometimes used in the sense of a train trip; that is, its round trip from the garage to the front to the destination in the rear and return to the garage. Whenever used in this sense the exact meaning is made clear by the context.

In view of the fact that regulating stations were new in our service, and also because of the great exactitude with which trains schedules had to be arranged, the most important details in the operation of the medical regulator's office are given below.¹⁸

Control of evacuations by railway transport was essentially technical and required minute attention to details. Close liaison was necessary between army sanitary formations, railway authorities and the hospitals of the advance, intermediate, and base sections. To carry out its purpose in the simplest and most effective manner, the medical regulator's office at St. Dizier instituted a daily routine and a system of special form and records. While a copy of each of the forms which will now be mentioned was made a part of the historical report of that office, these are not reproduced here, a mere statement of their designation and a very brief description of their purport being considered sufficient.¹⁸

GROUP 1.—*Preparation for evacuation:*

- Form 1. Daily evacuation chart.
- Form 2. Daily garage list.
- Form 3. Trip slate.
- Form 4. Area map.
- Form 5. List of trains regulated.

GROUP 2.—*Choice of destination:*

- Form 6. Daily average bed allotments.
- Form 7. Individual hospital bed records.
- Form 8. Current vacant bed list.
- Form 9. Load and destination sheet.
- Form 10. Daily report of beds allotted, used, remaining.

GROUP 3.—*Dispatch of trains:*

- Form 11. Request for movement of trains.
- Form 12. Telegrams from regulating officer.
- Form 13. Dispatching slate.

GROUP 4.—*Reports:*

Form 14. Telegrams from commanding officer of train.

Form 15. Detraining slate and train report.

Form 16. Ten-day report.

Form 17. Permanent record book, by months.

GROUP 5.—*Filing system:*

Memorandum.

As noted above, each evacuation hospital reported twice daily, or oftener if necessary, by telephone or telegraph, the number of recumbent and sitting cases evacuable, classified as follows: Preoperative, postoperative, sick, gassed, allies, prisoners, contagious cases, and neurological. From all these reports an "evacuation chart" (Form 1) was made up. Hospitals were then evacuated as the chart indicated, without requests on their part. If any evacuation hospital had special need for a train, request was made to the regulating officer, with the information as above. A train would be sent, the number of evacuations deducted, and the chart balanced.¹⁹ A large map also was used, and each day the evacuable cases, recumbent and sitting, were indicated for each evacuation hospital. This map showed also trains in garage as per daily garage list. A new map was needed daily, showing location of all railheads, evacuation hospitals, railways and garages.²⁰ The central idea was that the medical regulator should keep evacuation hospitals clear of evacueables without waiting for requests for their removal. With him the service became rather routine, an accumulation of evacuable cases calling automatically for evacuation. A daily garage list was made up and corrected every morning. It showed the location of trains actually in garage, at what points they were, and trains expected in during the day. These trains were then indicated on the area map. Trains en route were shown on what was called a "trip slate," loaded trains in red, returning trains in blue. All trains in advance of the regulating station ran at the same speed and became part of a continuous stream. Hospital trains could move no faster than freight trains, each having to keep its place in line.²¹

The destination of trains required another set of reports. Every morning—and oftener during active periods—the regulating officer received a telegraphic statement of the number of vacant beds in each base hospital or hospital center at the disposition of the regulating station. The chief surgeon, A. E. F., sent this information, consolidated, concerning hospitals in the base sections, but the hospitals and hospital centers in the advance and intermediate sections telegraphed it direct to the regulating officer, giving the number of beds available for the next 24 hours, medical, surgical, and contagious, also the number of the last train arriving with patients. An officer had charge of this "bed space" and kept a chart for each hospital, deducting subsequent arrivals from the last report. He was prepared to give the bed status of any hospital at any hour of the day.²² A combined chart showed at a glance the status of all the hospitals, and the net balance gave the total beds available. Before asking the railway authorities for a train it was necessary to give its

destination. In rush times, when minutes had to be saved, the train department merely asked the bed space department for a destination for a train carrying a certain number of medical and surgical cases, specifying whether a point in the advance, intermediate, or base section was preferred. A daily report of beds allotted and evacuations made was sent to the chief surgeon, A. E. F., and to G-4, G. H. Q., A. E. F., at Chaumont. A permanent record book with complete records of each day's evacuations was kept.²³

When patients were to be evacuated a request was made to the technical service (French) of the railway company, showing places to be evacuated, train desired, number of recumbent and sitting patients and destination. This request was made on French blank, Form No. 11. If approved, notice was given to the evacuation hospital concerned, so that loading could commence as soon as the train reached the platform. When the train schedule was furnished a telegram was sent immediately to each of the following: Chief surgeon's office; troops movement bureau of section concerned; commanding officer of train; commanding officer of hospital to be evacuated; commanding officer of receiving hospital; regulating officer of area through which train was to pass; and G-4, G. H. Q., statistical bureau. These telegrams followed established forms and gave the number of the train, the place of loading, date and hour of departure, destination and hour of arrival, number of patients, recumbent, sitting, wounded, gassed, medical, insane, and so on, number of rations to be furnished, and instructions as to whether patients were to be fed before loading or at certain points en route.²⁴

The commanding officer of a hospital train en route sent a telegram to his regulating officer, confirming it by mail, giving complete detailed information regarding the evacuation. The blank 15-A gave detailed information as to classes of cases, nationality, rank, hours of movement and time of de-training. A separate slate was kept for each day's evacuations, showing every train sent and giving exact information in detail concerning each movement. Every ten days a report was sent from the regulating officer to the chief surgeon, A. E. F., to G-4, G. H. Q., and to G-4, Army, showing the trains moved each day and the patients carried. A complete daily record for statistical purposes was also kept of each day's evacuations.²⁵

When the St. Mihiel operation was projected, the chief surgeon, First Army, had estimated that our casualties would be 33,000. In point of fact there were less than 7,000 during the actual operation. In anticipation of this operation, garage and entraining points and supply agencies were established, and 45 French trains of different types were obtained similar to those used later in the Meuse-Argonne operation (see description in earlier portion of this chapter), for French trains to this number were considered adequate in view of the short hauls necessary to base hospitals in the advance section.²⁶ After these hospitals were filled, secondary evacuations were made from them to hospitals farther in the interior, the better equipped but more unwieldy American trains being used for this purpose. The latter trains were also used for long hauls from the front into the interior. Trains

evacuating the army area were routed by the regulating station at St. Dizier, others by the regulating station at Is-sur-Tille. Bed credits given the former, however, could not always be used, for during this period all railways were so badly congested that there was very little choice of routes. This resulted in an unequal distribution of patients, some hospitals being overcrowded, while others had considerable empty bed space.¹⁷

Similar arrangements were made during the Meuse-Argonne operation, but casualties were so numerous then that transportation facilities were taxed to the utmost. During this operation, 154,898 casualties from the American First and Second Armies were transported on American trains and on those rented from the French.⁴ Until October 14, Is-sur-Tille regulating station was charged with only secondary evacuation. On and after the 15th it participated in evacuations from the front.²⁷ During this operation, 11 American trains made 114 evacuations in 47 days; each train averaged a round trip in four and one-half days.²⁸

The time in hours required for trains to make runs from evacuation points in the Meuse-Argonne operation to the various hospitals is shown in the following table:

TABLE 5.—*Number of hours required for trains to make runs from evacuation points to hospitalization points, Meuse-Argonne operation*²⁸

Evacuation point	Hospitalization point													
	Chau-mont	Vit-tel	Dijon	Alle-rey	Paris	Mes-ves	Vichy	Cler-mont	Blois	Nan-tes	Angers	Limo-ges	Peri-gueux	Bor-deaux
Toul.....	6	5½	10	12		20½			27	24		19		25½
Froidos.....	10	14	14	16½	15	18½		26						
Souilly.....	9½	14	14	18	15½	20	23½	21½	21½	32½	29	24	22½	30
Argonne front...	8	12½	13½	16¾	15½	17¾	22	25½	21½	26½	27½	23½	26¼	30¼

The following tables and notes pertain to evacuation from the front only and do not take cognizance of "secondary" evacuations, i. e., evacuations which cleared advanced base hospitals into hospitals farther to the rear:

TABLE 6.—*Evacuations by hospital trains, regulating station, Creil, Oise, February 17 to July 18, 1918, 1st and 26th Divisions*

Month	Officers	En-listed men	Total	French trains	Limits of evacuations	Total	French trains	Effectives	Position
February.....		* 394	394	10	Feb. 17-Apr. 7.	401	12	26th Division...	Soissons (Aisne) area.
March.....									
April.....		71	71	10		3,325	83	1st Division....	Cantigny, Picardy, area.
May.....	22	1,287	1,309	28	Apr. 18-July 17.			Two divisions...	On detached service with French Army.
June.....	32	1,580	1,612	37					
July.....		* 340	340	10					
Grand total.	54	3,672	3,726	95		3,726	95		

* Classifications as to officers and enlisted men not given in French reports; therefore monthly totals carried as enlisted men to balance totals.

† Forty-nine of these trains carried less than 25 Americans.

NOTE ON TABLE 6, BY MEDICAL REGULATOR²⁹

All evacuations by hospital trains regulated by the medical regulator, American regulating station at Creil, were made on French hospital trains. The medical regulator worked in liaison with the "Service de Santé" French regulating station, by whom the records contained herein were furnished. The records are complete in the period from May 18 to June 18, when careful record was kept by the regulating officer. After June 17 the French and American regulating stations for the Picardy area moved from Creil to Nantes, Seine, due to the severity of the nightly air raids, and as the medical regulator remained at Creil as regulating officer until the end of the month, the records furnished later by the "Service de Santé," Nantes, were not complete as to classification, entraining, and detraining stations. Before May 17 the records in the same manner are incomplete, as the American regulating station, a new function of the Army, was not fully organized. Several hundred American wounded from the 1st Division were discharged from French evacuation hospitals and sent by passenger trains to the replacement depot at Noyers and St. Aignan. Of these, records were unavailable. Upon completion of duty at Creil (the end of June) the medical regulator was assigned to Le Bourget (Seine) regulating station in charge of evacuations by hospital trains from the army known as the "Paris Group."

During the Cantigny offensive, the American wounded and sick on leaving the divisional (1st Division) sanitary formations were hospitalized in French evacuation hospitals at Beauvais, Poix, Crevecœur, etc., whence they were evacuated in French hospital trains to French base hospital centers in the rear. In so far as possible, trains carrying American and French patients were directed to hospital centers containing American and French base hospitals. As often as railroad conditions permitted, trains were directed through St. Germain, Seine (near Paris), where they were stopped, and the district surgeon (Paris) transported by ambulance such cases as were transportable to American hospitals in Paris. The Paris surgeon hospitalized in Paris, 1,880 Americans, regulated through Creil on 32 French trains.

In order to hospitalize American patients in American hospitals, plans were made to install an American evacuation center at Beauvais to receive American divisional wounded from the area, from which center American hospital trains might evacuate the wounded direct to American base hospitals. As the division was temporarily on detached service with the French Army and as the Chateau-Thierry operation started about the time the plans were formulated, they did not materialize.

TABLE 7.—*Evacuations by hospital trains, regulating station, Connantre, Marne, October 4 to November 5, 1918, 2d and 36th Divisions*

Month	Cases (un- classi- fied)	French trains	Limits of evacua- tions	Effectives	Position
October.....	8,367	34	} Oct. 4–Nov. 5.	2nd Division; 36th Divi- sion.	Champagne sector.
November.....	75	1			
Total.....	8,442	35			

NOTE ON TABLE 7, BY REGULATING OFFICER³⁰

The 2d and 36th Divisions were on detached service with the French Fourth Army and were in the lines in front of St. Etienne above Suippes (Marne). The limits of operations refer to the evacuations only, for although both divisions were moved to the Argonne area after a successful operation ending about October 16 the evacuations continued to November 11. The attack started October 2.

The evacuations were all made on French hospital trains loaned to the American regulating officer at Connantre by the French (Service de Santé, Regulatrice) Connantre.

The records (unclassified), as shown herewith, were furnished by the French. Hospitalization in the "bases" was furnished (by telephone) by the regulating station, St. Dizier, which at that time received all the available bed space in the advance, intermediate, and base section hospitals for trains dispatched from the front. No American trains were available for the Connantre evacuations, as the need in the Argonne section was so great.

TABLE 8.—*Evacuations by hospital trains, regulating station, Dunkerque, Nord, October 29 to December 25, 91st and 37th Divisions*

Month	Officers	Total officers and enlisted men	French trains	Limits of operations	Effectives	Position
October.....	38	647	2	Oct. 29-Dec. 12....	91st Division; 37th Division.	Ypres sector.
November.....	39	2,953	10			
December.....	12	1,011	2			
Total.....	89	4,611	14			

NOTE ON TABLE 8, BY REGULATING OFFICER ³⁰

These divisions were on detached service with the French Army in Belgium. Although all fighting had ceased on November 11 (the armistice), the evacuations continued through December 24, as shown by the attached records. The evacuations were made on French trains loaned by the French regulating station, Dunkerque. The French furnished these reports for the American regulating officer, Dunkerque, and they are included herewith to make the figures of all evacuations by hospital trains from the front complete.

TABLE 9.—*Evacuation by hospital trains, regulating station, Le Bourget, Seine, June 4 to October 25, 1918, Paris Group Army*

Month	Wounded	Sick	Gassed	Grand total	Allies	Enemy prisoners	American officers	American enlisted men	American total	American trains	French trains	Total trains
June.....	2,577	763	607	3,947	0	0	11	3,936	3,947	11	3	14
July.....	25,483	4,813	2,049	32,345	105	103	592	31,545	32,137	56	84	140
August.....	13,672	3,716	1,186	18,574	0	0	507	18,067	18,574	45	55	100
September.....	2,445	317	1,002	3,764	0	0	42	3,722	3,764	4	34	38
October.....	28	0	0	28	0	0	0	28	28	0	5	5
Total.....	44,205	9,609	4,844	58,658	105	103	1,152	57,298	58,450	116	181	297
Classification (per cent).	78	15	7	100	¼	¼	2	97½	99½			

TABLE 10.—*Separate operations in the Chateau-Thierry operation*

Limit of evacuations	Effectives	Position	Total	French trains	American trains	Total trains	French trains carrying less than 25 Americans
July 17-Aug. 28.....	1st Division; 2d Division.	Soissons area, Aisne...	10,456	117	8	125	75
Aug. 28-Sept. 14.....	32d Division.....	Juvigny, Aisne, Soissons area.	2,295	31	5	36	24
June 4-Oct. 14.....	Paris group army.....	Chateau-Thierry, Soissons area.	58,658	181	116	297	121

Total Chateau-Thierry evacuations, including ambulances, 71,409.

NOTE ON TABLE 10, BY REGULATING OFFICER ³¹

At the beginning of June, when the 2d Division went out into the lines, west of Chateau-Thierry, a large number of divisional wounded were hospitalized in evacuation

centers at Juilly and Meaux (Seine et Marne) and in French evacuation hospitals in that area. The chief surgeon (Paris district) relieved the pressure at the evacuation center, Juilly, by evacuating in ambulances 2,177 cases to the Paris hospitals, a distance of 26 kilometers. Other ambulance evacuations were made to French hospital centers, the figures for which are not available.

The official limits of operations differ from the limits of evacuations in that evacuations usually commenced the day the operations started, but continued until the evacuation centers closed, which was sometimes several weeks after operations had ceased. For example, the 1st and 2d Divisions started their offensive near Soissons about the 17th of July and were out of the lines within five days. The evacuations from that area started the day the offensive began and continued until August 27, a great many Americans having remained in American and in French hospitals in that locality, although the divisions had moved to another area. Likewise, the 32d Division started operations at Juvigny (Aisne) near Soissons on August 28 and evacuations continued until September 15, although the division was taken out of the lines after the first week. A large number of French trains during the whole Chateau-Thierry operation carried only 1 to 25 Americans from French evacuation hospitals. They are reported herewith to make reports complete, but should not be counted as full trainloads of Americans.

The records on French trains were furnished by the French medical regulator, at Le Bourget, who generously loaned French trains during the intensive period of the Soissons operation, at which time there was a shortage of American trains and a pressing need for French trains for French evacuations. The 17 American, 3 British, and 35 French trains on duty at the Le Bourget regulating station were in constant circulation for several weeks, and on several occasions the supply of trains on hand was exhausted. From September 7 to October 14, all evacuations from the Chateau-Thierry area were made on French trains, every American train having been dispatched to the St. Mihiel area pending the attack by the First Army. The French generously provided French trains to take their place at Le Bourget.

During the Chateau-Thierry-Soissons operation, the wounded for the most part were transported on American hospital trains. Up to July 17, 7 American trains were garaged in 1 central garage, Pantin, near Le Bourget, and 10 more with the 3 British trains arrived shortly after. Trains were dispatched from Pantin to the evacuation hospital centers as indicated by G-4, Army (Paris group) who placed the calls for trains. This system of calling for trains through G-4, Army, was unsatisfactory, in that trains were called for in anticipations of loads at the evacuation centers which sometimes never arrived. For example, two trains called for at Coulommiers (Marne) and one at La Ferte Gaucher (Marne) were dispatched from those points only half filled, the hospitals not having enough to complete the loads. The trains left on the scheduled time as designated, for the railroad traffic was very heavy and could not be blocked pending the arrival of more patients. Furthermore, every available bed space on trains was in urgent demand and several hundred wounded from the 1st and 2d Divisions needing transportation were lying without cover at Crepy-en-Valois (Oise). In one day during this period, as many as 49 French and American hospital trains were dispatched by the regulating station, Le Bourget, on French and American evacuations. These with troops, supply, and ammunition trains created stupendous traffic on the railroad lines.

The difficulty was chiefly in faulty telephone connections between the evacuation centers, which were some distance from (G-4, Army) La Ferte-sous-Jouarre, Marne, and between (G-4, Army) the regulating station, Le Bourget. It took so long to transmit calls that conditions at the evacuation centers oftentimes changed and trains already dispatched could not be diverted. G-4, Army, had no telephone connections at the beginning of the attack with the evacuation centers (1st and 2d Divisions) located in the vicinity of Crepy-en-Valois, so that the medical regulator prepared his evacuations direct with the evacuation centers and received the necessary information on evacuees with greater efficiency and in shorter time. The same system was finally used for the evacuation centers at Coulommiers, La Ferte Gaucher, and Chateau-Thierry and proved more satisfactory.

Daily available bed space (5,000) at base hospital centers in the rear was furnished by telegram from the chief surgeon's office, S. O. S., and the medical regulator thus coordinated the evacuations from the evacuation centers at the front direct to the rear. At first, bed spaces were furnished by the chief surgeon, Paris district, and the primary and secondary evacuations from the Paris Group area were coordinated through his office. They worked well, the telephone conditions being good, but the system required at best the passing of necessary information through another bureau and necessitated further delays. The bed reports (base hospitals) were finally telephoned direct to the regulating officer after July 24, so that with number of evacuable cases, the bed reports at the bases and the regulation of trains in one bureau, the regulating officer was enabled to direct the evacuations with greater efficiency and in shorter time.

TABLE 11.—*Evacuation by hospital trains, regulating station, St. Dizier, Haute Marne, September 5 to December 1, 1918, (First Army)*³²

Month	Wounded	Sick	Gassed	Grand total	Allies	Enemy prisoners	American officers	American enlisted men	American total	American trains	French trains	Total trains
September.....	22,907	15,619	1,083	39,609	380	928	889	37,412	38,301	52	54	106
October.....	55,568	38,712	16,079	110,359	739	1,019	2,669	105,932	108,601	72	228	300
November.....	17,434	25,745	2,871	46,050	234	753	970	44,093	45,063	40	83	123
Total.....	95,909	80,076	20,033	196,018	1,353	2,700	4,528	187,437	191,965	164	365	529
Percentage.....	48.9	40.9	10.2	100	.7	1.4	2.3	95.6	97.9			

TABLE 12.—*Operations in the St. Dizier, regulating station figures*³²

Limits of evacuations	Effectives	Positions	Totals
September 12-26.....	First Army.....	St. Mihiel sector.....	21,009
September 26-November 12.....	do.....	Meuse-Argonne sector.....	150,350
October 10-25.....	Second Army.....	Toul sector.....	4,548
September 5-December 1.....	First Army, Second Army.....	St. Mihiel, Meuse-Argonne sectors.....	196,018

NOTE ON TABLE 12, BY REGULATING OFFICER³²

The Second Army was formed October 12 and occupied the Toul sector. The regulating station, St. Dizier, continued to make evacuations from the Second Army evacuation center, Toul, until October 25, after which these were made by the regulating station, Is-sur-Tille.

TABLE 13.—*Record of evacuations made by trains regulated at St. Dizier*²⁸

Operations	United States trains	French	Total	Daily average
St. Mihiel (Sept. 12-25).....	29	28	57	4
Argonne (Sept. 26-Nov. 11).....	114	304	418	9
Before St. Mihiel (Sept. 5-11).....	6	0	6	1
After Argonne (Nov. 12-30).....	15	33	48	2½
Total evacuations (Sept. 5-Nov. 30).....	164	365	529	

During the St. Mihiel operation 7 United States trains were on duty during 14 days, making 28 evacuations. One train made 7 trips. The average number of trips per train was 4; the average length of round trips, 3½ days.

During the Argonne operation 11 United States trains were on duty during 47 days, making 114 evacuations. One train made 14 trips. The

average number of trips per train was 10.36; the average length of round trips, 4½ days.

The average load for French trains was about one-half that of American trains. For this reason the latter, in the St. Mihiel operation, made more evacuations than were made by French trains, but they made short trips into the zone of the advance, just as did the French. On the other hand, in evacuations from the Argonne, American trains were used on long trips into intermediate and base sections, while French trains were used for short trips, the numbers carried thus balancing more nearly those carried on French trains.²⁸

One of the essential features which made for the success of evacuation through St. Dizier during the Meuse-Argonne operation was the excellence of telephone communication between that station and the evacuation points, on the one hand, and the office of the chief surgeon, A. E. F., on the other, thus enabling it, with the least possible delay, to coordinate evacuations direct to bases from the front. An officer from G-4, G. H. Q., and the evacuation officer representing the army surgeon, at Souilly, controlled movement of evacuees from evacuation centers and coordinated them through an officer at every such center charged solely with control of evacuations and loading of patients on trains. These officers represented both the army surgeon and the fourth section of the general staff. This system obviated the necessity for sending calls through another bureau.³³

In order to avoid the mistake of calling for hospital trains when they were not actually needed, or of dispatching trains not fully loaded, and for the purpose of furnishing more accurate information for the evacuation department so that equipment at the disposal of the regulating officer could be used to the maximum advantage, the system of evacuation, as outlined herewith in brief, was adopted at St. Dizier in preference to that used during operations in the Chateau-Thierry sector.³²

Evacuation centers at Souilly, Toul, Fleury, Vaubecourt, Froidos, etc., telephoned the regulating officer daily (8 a. m. and 8 p. m.) or as often as necessary, the number of patients to be evacuated, classified. They did not call for any specific number of trains, simply giving the number and type of patients to be evacuated. Supplied with these data the medical regulator arranged for a sufficient number of trains completely to evacuate all transportable patients, telephoning the evacuation centers information as to the *marche* of trains, the time allowed for loading, and the number and types of patients to be loaded. Trains best equipped for carrying particular loads were chosen. This was important because the equipment of the station consisted of 43 French trains, varying in carrying capacity from 86 to 700 places, besides 14 American trains. Officers at the evacuation centers saw to it that trains were loaded within the allotted time, though the personnel engaged in this work often labored 48 hours without rest. Each train was loaded with the type of patients specified and was dispatched to hospitals prepared to care for the kind of patients delivered to them. Upon completion of evacuations, trains were immediately ordered back to garage.³²

TABLE 14.—Daily record of trains sent from each evacuation center, served by St. Dizier regulating station, St. Mihiel and Meuse-Argonne operations³⁴

September																														
Evacuation centers	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
Toul.....	1			1	1		1	3	4	3	3	4	4	4	4		1	2	1	4	1		1			1				
Sorcy.....									1		1																			
Trondes.....											1																			
Vadelaincourt.....																										1				
Souilly.....							1		1		1		1		1		1	1	1	3	1	3	2	2	3	4				
Vaubecourt.....				1							1		1		2		1		1	1	1	1	2	2	5	2				
Froidos.....																										2				
Fleury.....																								1	3	2				
Villers-Daucourt.....																								1	1	1				
Total loadings.....	1	0	0	2	1	0	2	3	6	3	7	4	6	4	7	0	3	3	3	8	3	5	6	11	10	14				

Evaluation centers	October																															November												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11		
Toul.....										2	1	1										1	3		1																			
Vadelaincourt.....	1			1						1					1		2	4	4	3	4	1	3	2	5	3	3	2	2	3					2	4	2	3	3	2	3	2	3	
Souilly.....	5	4	5	3	3	2	3	5	2	3	3	5	3	3	3	4	5	5	4	4	3	4	1	3	2	5	3	3	2	2	3	2	2	3	3	3	2	1	2	1	1	1	1	
Vaubecourt.....	2	3	1	6	3	3	1	2	2	4	4	3	3		3	2	2	2	3	2	2	2	2	2	1	1	2	3	2	1	3		3	1	3	2	1	2	1	1	1	1		
Froidos.....	2	2	2	1	3	1	1	2	1	1	1	2	2	1	1	1	1	2	1	2	1				2	2	2	1	1	1				1			2	2	1	1	1	1		
Fleury.....	4	3	3	2	4	2	2	2	2	3	4	2	2	2	2	2	3	2	1	1	3		2	1	2	2	3	2	1	2	1	2	2	3	1	2	2	1	1	1	1	1		
Villers-Daucourt.....	1	2		1	1	2	2		1					1	1		2	1	1	1		1	1	1	1		2	1	1	1		1	1	1	1	1	1	2	1					
Revigny.....												1		1		1		1	1	1		1			2	1		1		1				1										
Varennes.....																																												
Total loadings.....	15	14	12	13	13	10	14	8	9	14	14	13	7	11	12	11	15	13	10	13	9	8	10	3	14	9	13	9	6	9	3	9	6	12	7	8	10	6	9	5	6	6		

TABLE 15.—Number of trips made by hospital trains in the performance of evacuation³⁵

Regulating station	American trains	French trains	French trains carrying less than 25 Americans and included in total trains	Total
Creil.....	0	95	49	95
Le Bourget.....	116	181	121	297
St. Dizier.....	164	365	0	529
Connantre.....	0	34	0	34
Dunkerque.....	0	16	0	16
Total.....	280	691	170	971

TABLE 16.—Summary, classified by officers, enlisted men, and types of patients evacuated⁴

	Chateau-Thierry		St. Mihiel		Argonne ^a		Total	
	Per cent	Evacuations	Per cent	Evacuations	Per cent	Evacuations	Per cent	Evacuations
Officers.....	2	1,001	1 ¹ / ₂	400	2	3,752	2	5,153
Enlisted men.....	97 ¹ / ₂	43,385	96	19,865	96 ¹ / ₂	148,157	96 ¹ / ₂	211,407
Others.....	¹ / ₂	209	2 ¹ / ₂	744	1 ¹ / ₂	2,989	1 ¹ / ₂	3,942
Total.....	100	44,595	100	21,009	100	154,898	100	220,502
Wounded.....	78	34,741	53	11,246	51	79,415	60	125,402
Sick.....	15	6,913	45	9,501	36	56,015	32	72,429
Gassed.....	7	2,941	2	262	13	19,468	8	22,671
Total.....	100	44,595	100	21,009	100	154,898	100	220,502
Between operations (covering all evacuations not included in above operations)								
Grand total.....								259,202

^aSecond Army evacuations from Toul, October 10 to 25, 4,548. Total Argonne First Army evacuations, 150,350 on 409 hospital trains.

TABLE 17.—*Hospital trains employed*^a

	Chateau-Thierry	St. Mihiel	Argonne	Total	Between offensives	Grand total
American.....	78	29	114	221	42	263
French.....	135	28	304	467	119	586
Total.....	213	57	418	688	161	849

TABLE 18.—*Evacuations by trains from First Army, September 5 to December 1 (including both St. Mihiel and Meuse-Argonne operations)*^a

Month	Wounded	Sick	Gassed	Total	Allies	Prisoners	American officers	American enlisted	Total American	French trains	American trains
September.....	22,907	15,619	1,083	39,609	360	928	889	37,412	38,301	52	54
October.....	55,568	38,712	16,079	110,359	739	1,019	2,669	105,932	108,601	72	228
November.....	17,434	25,745	2,871	46,050	234	753	970	44,093	45,063	40	83
Total.....	95,909	80,076	20,033	196,018	1,333	2,700	4,528	187,437	191,965	164	365

NOTE ON TABLE 18^a

The incidence of influenza in the last week in September, the rising curve in October, and the fall in November are indicated by the column of "sick." This epidemic was responsible for a large number of evacuations, as the First Army lacked a convalescent camp within its area and possessed small hospitalization in its immediate rear; the converse holding for the Second Army, based upon Toul, with its numerous barracks.

TABLE 19.—*Summary of evacuations from the front by hospital trains*³⁵

Regulating stations	Departments	Positions	Troops		Time of evacuations	
Creil.....	Oise.....	Soissons and Picardy.	26th Division, 1st Division.		Feb. 17-July 10.	
Le Bourget.....	Seine.....	Chateau-Thierry sector, Soissons sector.	Paris group army.....		June 4-Oct. 25.	
St. Dizier.....	Haute Marne.....	St. Mihiel.....	First Army.....		Sept. 5-Dec. 1.	
		Meuse-Argonne.....	Second Army.....			
Connantre.....	Marne.....	Toul Sector.....	do ^c		Oct. 4-Nov. 4.	
Dunkerque.....	Nord.....	Champagne Sector.	2d Division, 36th Division.		Oct. 29-Dec. 25.	
		Ypres Sector.....	91st Division, 37th Division.			

Regulating stations	Wounded	Sick	Gassed	Grand total	Prisoners	Allies	Enlisted men	Officers	Total Americans
Creil.....	^a 3,726			3,726			3,672	^b 54	3,726
Le Bourget.....	44,205	9,609	4,844	58,658	103	105	57,298	1,152	58,450
St. Dizier.....	95,909	80,076	20,033	196,018	2,700	1,353	187,437	4,528	191,965
Connantre.....	^a 8,442			8,442			8,442	^(b)	8,442
Dunkerque.....	^a 4,611			4,611			4,522	^b 89	4,611
Percentages by classes (approximate).....	156,893	89,685	24,877	271,455	2,803	1,458	261,371	5,823	267,194
	60	32	8	100	1	1½	96½	2	98½

^a Second Army evacuations from Toul, October 10 to October 25, 4,548 on six American and three French trains, included. With American grand total, 267,194 and 2,177, transported by ambulance to Paris in June, gives grand total of 269,371 Americans.

^b Classified as wounded (battle casualties from front). Records of sick, wounded, and gassed, unclassified, in French train reports.

^c Records of officers incomplete in French train reports. Records of allies and prisoners unclassified, as wounded, sick, and gassed, and as to officers and enlisted men in French train reports. Thus officers and enlisted men refer to Americans only.

The most important facts concerning the activities of the regulating station at Is-sur-Tille are given in Tables 20, 21, and 22. The first evacuations made by hospital trains operated by this station occurred in March, 1918.²⁷

The number of hospital trains at the disposition of the regulating officer was at first considered inadequate to meet anticipated demands, but, as it proved, evacuations during the active four days of the St. Mihiel operation were far less than had been expected. The Meuse-Argonne operation, however, during the first, second, and third weeks of October, together with the epidemic of influenza, which spread rapidly throughout the army at the time, caused double the number of evacuations which would have been required with a normal sick rate.³²

From September 26 to October 14, 1918, the regulating station at Is-sur-Tille controlled many of the secondary evacuations, by which is meant evacuations from base hospitals in the zone of the advance to others nearer base ports.²⁷ It was the practice during that period to send patients by train from evacuation hospitals to base hospitals in the zone of the advance, whence, as opportunity offered, other trains took them farther to the rear. Hospital train equipment at this time was inadequate and it was only by the utmost care and by the narrowest margin that trains were able to keep the evacuation hospitals cleared. Hospital trains were sent preferably to forward base hospitals, because of the shorter hauls, and then, during lulls in fighting, they cleared those hospitals in turn, in preparation for later short hauls from the front when heavy fighting was resumed. A round trip between the front and the hospitals in the advance section required some 24 hours or less, while between the front and the hospitals in the base sections a round trip required about a week. Had trains been employed frequently in the first instance for the long hauls congestion in evacuation hospitals would have been inevitable. Only during intermissions in the conflict and when casualties diminished in the latted part of October did long hauls become practicable. After October 14, when the demands for hospital trains at evacuation hospitals diminished, it became possible to move patients direct from the front to base hospitals well toward the rear, and then the former system, with the secondary evacuations incident thereto was discontinued.²⁷

In selecting garages for hospital trains, four considerations were taken into account by the Is-sur-Tille regulating station: Sufficiency of siding space, engine terminals, location of base hospitals, and base of supply. The following garages were used by the Is-sur-Tille regulating station for trains assigned to it:²⁷

TABLE 20.—Hospital train garages

Location	Capacity (trains)	Capacity	Capacity (trains)
Foulain.....	1	Bourmont.....	1
Liffol-le-Grand.....	2	Vittel.....	1
Bazoilles.....	1	Damblin.....	3
Hymont.....	1	Rosières-sur-Mouzon.....	1
Harréville.....	1	Breuvannes.....	1
Remoncourt.....	1	Is-sur-Tille.....	6
Aulnois (Vosges).....	1		

The following evacuations were effected from base hospitals in the advance section to hospitals in intermediate and base sections:²⁷

TABLE 21.—*Evacuations from base hospitals in advance section, A. E. F.*

Month 1918	French trains	American trains	Patients
March.....		3	1,128
April.....		4	1,396
May.....		3	1,080
June.....		3	1,300
July.....		2	610
August.....		16	5,780
September.....	9	36	16,552
October.....	56	33	31,777
November.....	16	7	8,198
Total, patients.....			67,821

TABLE 22.—*Evacuations effected by regulating station at Is-sur-Tille*²⁷

Types and locations of hospitals concerned in the evacuations	Number of trains used	Kind of train	Patients
Patients evacuated from evacuation hospitals to hospitals in the advance section from Sept. 26 to Oct. 14, 1918, inclusive.....	26	American.....	11,125
Patients evacuated from evacuation hospitals to base hospitals in the near intermediate section (Dijon, Beaune, Allerey, Mesves, and Mars).....	84	French.....	28,806
Patients evacuated from evacuation hospitals to distant intermediate and base section hospitals.....	28	American.....	12,472
Patients evacuated from evacuation hospitals in the advance section from Oct. 15 to Nov. 11, inclusive.....	56	French.....	17,947
Patients evacuated from evacuation hospitals in the near intermediate section.....	3	American.....	1,260
Patients evacuated from evacuation hospitals to hospitals in the far intermediate section.....	42	French.....	15,282
Patients evacuated from evacuation hospitals to hospitals in the base section.....	127	do.....	39,074
Number of secondary evacuations from base hospitals in the advance section to distant hospitals in the intermediate section base.....	5	American.....	2,453
Secondary evacuations from base hospitals in the advance section to hospitals in the base section.....	52	do.....	26,246
.....	49	.....	15,110
.....	16	American.....	7,945
.....	2	French.....	560
Total.....	293		106,770

TABLE 23.—*Assignment of hospital trains to regulating stations, September 26 to November 11, 1918*

Dates	Regulating station	Kind of train	Number
Sept. 26-Oct. 14.....	Is-sur-Tille.....	American.....	8
	do.....	French.....	11
	St. Dizier.....	American.....	7
	do.....	French.....	34
Oct. 15-Nov. 11.....	Is-sur-Tille.....	American.....	5
	do.....	French.....	7
	St. Dizier.....	American.....	10
	do.....	French.....	40 ^a

^a The report of St. Dizier states that its equipment consisted of 14 American and 43 French trains.

While the station at Is-sur-Tille was concerned for a brief period with secondary evacuations from the zone of the advance, other secondary evacuations were conducted directly by the office of the chief surgeon, A. E. F., at Tours. Trains operated in the zone of the armies were assigned by G-4, G. H. Q. to the several regulating officers; on the other hand, those assigned and operating in the Services of Supply were directly under the jurisdiction of the chief surgeon and were controlled by his office.²⁷

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CHAPTER VIII

THE VETERINARY SERVICE

In Volume I of this history, it was related that the Veterinary Corps had been established and had become a part of the Medical Department by an act of Congress approved June 3, 1916, and that at the time of our entry into the World War, the organization of the Veterinary Corps had not been completed. In the absence of prescribed organization for the Veterinary Corps, General Pershing, in forwarding his project of the rear, in the late summer of 1917, made the Veterinary Corps, A. E. F., a part of the Remount Service,¹ which in turn was a part of the Quartermaster Corps. Simultaneously, organization of the Veterinary Corps was being effected in the United States. A War Department order published in October, 1917, authorized the organization of a Veterinary Corps, to consist of 1 commissioned officer and 16 enlisted men for each 400 animals in service.²

In November, 1917, two selected officers of the Veterinary Corps were sent to France, to be placed at the disposition of the commander in chief, A. E. F., with the view of organizing the veterinary service of those forces, on lines similar to those in the United States.³ These two veterinary officers took with them to France an advance copy of Special Regulations, No. 70, War Department, 1917, which comprehensively outlined the organization of the veterinary service with a view of providing a simple, direct, and efficient means for the evacuation of sick and inefficient animals from combatant forces to veterinary hospitals in the Services of Supply, where organized and specially trained units might care for them. The regulations also provided for the evacuation of cured animals, from hospitals in the rear, to the remount depots, from which, when received, they could be either re-issued or otherwise disposed of.

The provisions of Special Regulations, No. 70, were not immediately adopted in the American Expeditionary Forces. The veterinary service continued to operate under General Orders, No. 39, referred to above, until July 26, 1918. General Orders, No. 122, G. H. Q., A. E. F., July 26, 1918, revoked General Orders, No. 39. By the provisions of General Orders, No. 122, an officer of the Veterinary Corps was detailed as assistant to the chief of the remount service and as chief of the Veterinary Corps, A. E. F.

In August, 1918, the Veterinary Corps, A. E. F., was reorganized in accordance with Special Regulations, No. 70, War Department, 1917;⁴ and it was transferred from the office of the chief quartermaster, A. E. F., to the office of the chief surgeon, A. E. F. A chief veterinarian was designated who was charged, under the chief surgeon, with the administration of the veterinary service, A. E. F.

The veterinary hospitals were placed under the command of officers of the Veterinary Corps, and steps were taken immediately to collect scattered companies and half companies of such hospitals into whole working organizations.³ The issue of convalescent animals from veterinary units back to organizations was stopped, and the policy of passing all convalescent animals through remount depots for reissue was instituted.³ The prompt rendering of weekly animal sick reports, and their accurate compilation, were insisted upon.

The veterinary service of the theater of operations, as provided by Special Regulations, No. 70, comprised the following personnel: A chief veterinarian, the adviser, under the chief surgeon, of the commander in chief, on all matters pertaining to the health and efficiency of the animals of the forces in the field; assistant chief veterinarians, one for each army, with duties and responsibilities similar to those of the chief veterinarian, but confined to the army to which each was assigned; corps and division veterinarians; and veterinarians assigned to mobile organizations.

Special Regulations, No. 70, provided for mobile veterinary sections, for base veterinary hospitals, and for veterinary convalescent depots. The veterinary hospitals, as evolved in the American Expeditionary Forces, however, comprised corps mobile veterinary hospitals (evacuation), base veterinary hospitals (stationary), and veterinary hospitals (stationary). They were subsequently authorized in Tables of Organization by the War Department.⁵

Though the utilization of railheads for evacuation of sick animals for mobile organizations was contemplated in Special Regulations, No. 70, their use for this purpose was refused at first in the First Army, without reference to General Headquarters.⁶ While the question was being solved at General Headquarters, hundreds of animals were lost through being evacuated long distances overland when in a debilitated condition and often suffering from serious wounds. Literally thousands of animals were retained with divisions because of the inability of division veterinarians to cope with the requirements of long overland evacuation.⁶

The necessity of evacuating sick and wounded animals by railroad from the front was conceded eventually, but again a difficulty arose. Instead of it being appreciated that this was a veterinary service, it was considered to come directly under the general staff of the army concerned. It meant that the railroad portion of the veterinary evacuation mechanism was out of the control of the army veterinarian; therefore, adequate arrangements could not be made to send trainloads of sick animals to the hospitals prepared to receive them.⁶ On the contrary, they were evacuated to the hospitals deemed, by the general staff of the army, most suitable, when there was not always adequate knowledge of the receiving capacity of such hospitals, available to the section of the general staff directing the evacuation. Presently, this obstacle to a smoothly operating evacuation system was removed. Veterinary evacuating hospitals (sections), commanded by veterinary officers, then received evacuated animals from divisions and removed them by railroad to allotted hospitals.⁶

Because of the military necessity for their retention at the front, it was impractical to evacuate all animals affected with disease.⁶ To have done so would have made our armies immobile, in so far as animal transportation was concerned, for animal replacements were not available in sufficient numbers. However, it was possible markedly to increase the efficiency of the remaining animals by evacuating the major portion of the sick.⁶

In the fall of 1918, when the opportunity presented adequately to evacuate sick and wounded animals from the combatant organizations, they had been retained for such a long time in divisions and had in consequence accumulated in such great numbers that the evacuation had to be on a very large scale. This large evacuation, although essential, threw a tremendous strain on all veterinary hospitals. Under this strain, some of them perilously approached collapse.⁶ In a measure, this collapse was prevented by the timely arrival of additional veterinary hospitals from the United States, and by the use of labor companies to assist the personnel of the Veterinary Corps.⁶

On November 1, 1918, 15 veterinary hospitals had been established; however, not all of them had been completely constructed.⁶ At this time, the veterinary hospital capacity was 12,000; but it was necessary to hospitalize a greater number of animals than this. To do so, necessitated the use of picket lines, corrals, paddocks, etc.⁶

A determined effort was made to obtain new hospital sites, and to have more labor troops assigned to the Veterinary Corps to assist in the evacuation and care of sick and wounded animals.⁶ The hospital capacity was increased as rapidly as possible until standing room for 26,664 animals was obtained. This was exclusive of the veterinary hospital capacity in the armies.⁷

The final result of the effort gradually to bring the animal efficiency of the United States Army up to a standard equal to that of the armies of our Allies was not reached until November 11, when hostilities ceased.⁷

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SECTION II

AMERICAN DIVISIONS WITH FRENCH ARMIES (OCTOBER 20, 1917, TO SEPTEMBER 17, 1918)

CHAPTER IX

THE 1ST DIVISION IN THE SOMMERVILLER, ANSAUVILLE, AND CANTIGNY SECTORS. IN MONTDIDIER-NOYON OPERATION

SOMMERVILLER SECTOR

After a period of intensive training in the Gondrecourt area, the 1st Division, with its artillery, which had been in training at Valdahon, entered the Sommerviller (also spoken of as the Luneville) sector on a front of about 10 km. (6.21 miles) southeast of Nancy. On the night of October 20-21, 1917, it began to occupy the front by battalions, each attached to a corresponding French unit,¹ one battalion from each of the four infantry regiments of the division serving in the lines at a time, interspersed with French troops.¹ They remained in the lines about 10 days under tactical control of the French 18th Infantry Division whose headquarters was located at Sommerviller.² The sector was quiet. The first American shot in the war was fired by Battery C, 6th Field Artillery, at 6.05 a. m., on October 23, from a position 400 meters (437 yards) east of Bathelemont.¹ The first German prisoner captured by Americans was taken by the 1st Division October 27, 1917. The first American casualties suffered in actual combat occurred on November 3, 1917, in a night raid by the enemy against a part of the 2d Battalion, 16th Infantry, north of Bures, in which three men were killed and seven wounded.^{3 a} On the night of November 20, 1917, the division was withdrawn from the line to the Gondrecourt area to continue training.¹

MEDICAL DEPARTMENT ACTIVITIES

Ambulance Company No. 13, the only American ambulance company which then operated in this sector, furnished litter bearers for duty in the trenches, and evacuated patients to Field Hospital No. 13 and from it to Base Hospital No. 18 at Bazoilles-sur-Meuse, and to Camp Hospital No. 1 at Gondrecourt.⁴ It did not establish a dressing station, as patients were moved

^a The first fatality in the American forces due to enemy action occurred on September 4, 1917, when enemy air forces bombed a British hospital group at Dannes-Camiers, of which American Base Hospitals No. 5 and No. 12 were a part. Of those on duty, First Lieut. William T. Fitzsimons, M. C., and three enlisted men were killed. Three officers, one nurse, and six enlisted men, one of whom was a member of the Royal Army Medical Corps, were wounded. Among the patients, 22 were wounded, all of whom belonged to the British service.

direct by litters and by vehicles from the battalion aid stations to the field hospital. Because of road conditions the ambulance head was some distance in the rear of the aid stations. The wounded were carried through the trenches to the battalion aid stations and thence back of them a distance of 3 km. (1.8 miles) to Bathelemont, the ambulance head.⁵

Field Hospital No. 13 was the only field hospital established for the service of the division in this sector. Half of it, with an X-ray plant and other necessary equipment, was located in a residence and two pavilions at Einville; the other half occupied part of a hospital at Dombasle.⁵ As the base and camp hospitals to which this hospital was to evacuate were 81 km. (50.3 miles) distant by road, patients were retained with greater comfort at Einville.⁵

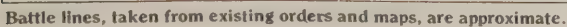
ANSAUVILLE SECTOR

After a second period of training in the Gondrecourt area, where it performed extensive and prolonged maneuvers, the 1st Division (less the 2d Infantry Brigade), on January 15, 1918, began its movement to relieve the 1st Moroccan Division in the Ansaerville sector. Here it remained until February 5, under tactical command of the French 69th Division,⁶ when it took over control of the sector. On March 9, the 2d Infantry Brigade, which had remained in the Gondrecourt area, relieved the 1st Infantry Brigade.⁶ This sector, near Toul, had a frontage of about 7.5 km. (4.6 miles) and a depth of twice that distance. The most available road was that of Beaumont—Mandres—Ansaerville—Menil-la-Tour, though other roads were used when necessary.⁷ The enemy held well constructed trenches which had been occupied since 1914, running parallel to the Flirey—Bouconville road about 1 km. (six-tenths of a mile) north of Seicheprey.⁷ The sector was generally quiet, though there were occasional active days characterized by raids, artillery bombardments, and gas attacks.⁵

MEDICAL DEPARTMENT ACTIVITIES

The division surgeon's office, headquarters of the sanitary train, and headquarters of its field hospital and ambulance sections were at Menil-la-Tour.

Medical Department personnel established an aid station at each regimental headquarters and battalion aid stations in battalion areas.⁷ A station list of the area reads as follows: Regimental headquarters 16th Infantry, Mandres; 18th Infantry, Beaumont; 26th Infantry, Bouconville; 28th Infantry, Beaumont; 1st Engineers, Boucq, with battalion aid stations variously situated at Beaumont, Mandres, and Ansaerville, and in dugouts south of the Flirey—Beaumont road; 5th Artillery, Cornieville, with battalion aid stations at Le Faux Bois and at Mandres; 6th Field Artillery, Ansaerville, with battalion station in that vicinity; 7th Artillery, woods west of Mandres; 1st Supply Train, Raulecourt; 1st Ammunition Train, Troussey and Sanzey; Machine Gun Battalion units, Ansaerville, Beaumont, and Xivray.⁸ The most advanced battalion aid stations were located in dugouts at Seicheprey, and as this village was under direct enemy observation and was shelled frequently,



evacuation thence had to be carried on at night, when ambulances could travel the road from Beaumont.⁹ Removal to the regimental aid station at that point was accomplished under difficult and trying circumstances, for it was necessary that patients be carried a kilometer (0.6 mile) or more through trenches which often were knee deep in mud and water. Evacuations usually were of medical cases, of a moderate number of men suffering from shell wounds, and, at times, of a fairly large number of gas cases.¹⁰

Infantry regimental aid stations were established at first at Beaumont and Mandres, but on March 1 the station at the latter place was moved to Bouconville.¹¹ These stations at Beaumont and Bouconville were in cellars of partially destroyed buildings and were made as nearly bombproof as possible by coverings of logs, sandbags, and stone. They were equipped only for first aid. The road between Beaumont and Mandres was especially dangerous, as it was shelled day and night, many casualties resulting.⁹ The regimental aid station of the 16th Infantry at Mandres had at first functioned also as a dressing station, but on March 1, 1918, this service was taken over by Ambulance Company No. 2. On March 27 this unit was relieved by Ambulance Company No. 3.¹² This station took care of gassed cases as well as of other cases and to a limited degree acted as a triage.¹² It was on the axial road and occupied a building whose walls had been protected by thick sandbags, but occasionally during shell fire it utilized a dugout which it had constructed near by.¹²

AMBULANCE COMPANIES

Ambulance Company No. 13, at Menil-la-Tour, operated ambulances and provided details of litter bearers for service with the lines, until relieved, on March 21, 1918, by Ambulance Company No. 12.¹³

The ambulance company serving the front (Ambulance Company No. 13 until March 21, thereafter Ambulance Company No. 12), augmented by vehicles from other companies, maintained headquarters and an ambulance park for its own vehicles with some from other companies, at Menil-la-Tour, dispatching ambulances to the dressing station at Mandres and to forward stations. Other ambulances were attached to troop aid stations at important points in rear areas of the sector.¹⁴

Evacuation Ambulance Company No. 1 (Services of Supply) maintained two ambulances at Field Hospital No. 13 for evacuation to Sebastopol, where twenty ambulances were available for a rear circuit in times of stress.¹⁴

The different ambulance circuits, viz, front and rear, were established for dealing with battle casualties, with a third circuit for the routine sick. The front circuit was maintained by Ford ambulances working forward from Mandres and returning to deliver patients to the dressing station there. Pertaining to it were emergency ambulances stationed at Beaumont, Rambucourt, and Bouconville, and at times at Seicheprey, with reserve at Mandres. The advance point to which ambulances could go by daylight was on the Beaumont-Bouconville road paralleling the front line and 2 km. (1.2 miles) from it.¹⁴ At night ambulances could be sent forward to Xivray-Marvoisin and

Seicheprey, 1 km. (0.6 mile) from the front line.¹⁵ When circumstances warranted the risk, emergency ambulances stationed at Seicheprey could evacuate from Seicheprey by day, but this could not be practiced as a routine measure. The rear circuit of heavy G. M. C. ambulances began at Mandres, whence patients were carried to a fixed evacuation hospital. In order to cut down transportation, patients who were deemed able to stand the longer trip to Toul or to Sebastopol were sent directly from Mandres and were not required to stop at the triage at Menil-la-Tour.¹⁴ Patients were distributed from Mandres as follows: (1) Seriously wounded and sick who could not stand long ambulance transportation, to Menil-la-Tour; (2) gassed, to Menil-la-Tour; (3) surgical cases, to Sebastopol; (4) sick and contagious diseases, to Toul.¹⁵ A few ambulances for this circuit were maintained at Mandres, with reserve at Menil-la-Tour. At times of expected stress the ambulance park was advanced to Hamonville, and ambulances and trucks were dispatched to Mandres as needed.

In quiet times a routine circuit of ambulances was maintained, daily calls being made at all stations, front and rear zones that could be reached for the collection of sick and slightly wounded to be triaged at Menil-la-Tour. This measure permitted retention of a certain number of ambulances posted at outlying stations, for emergency use.¹⁵

FIELD HOSPITALS

Field Hospital No. 13 was established on January 17, at Menil-la-Tour, in 14 Adrian barracks taken over from a French field hospital and equipped for the care of 200 patients.¹² This establishment was conducted at first as a divisional hospital and, later, after hospitals in the rear began functioning as a triage, for the reception of gassed patients and some current sick, until relieved about March 31 by a field hospital of the 26th Division.¹² The location was unsuitable for a hospital because of its proximity to a large dump and railhead subject to bombing attacks. Several such attacks occurred, missiles being dropped within a hundred yards of the hospital, but no artillery fire ever disturbed its neighborhood.¹²

Patients began to be received here immediately after arrival of the division in this sector. Seven wounded were admitted on January 21, and sixty-two gassed cases on the 26th, the latter being the first casualties of this character in the division.¹⁴ Of the 674 patients received here by Field Hospital No. 13, the disability of 323 was due to gas.¹⁴

Field Hospital No. 12, after being held in reserve, was established on January 23 at Sebastopol in large, permanent, stone barracks.¹² It functioned as an evacuation and surgical hospital until relieved on February 4 by Evacuation Hospital No. 1, which then assumed responsibility for care of the seriously wounded.¹² The field hospital personnel had been previously augmented by details from Ambulance Companies No. 3 and No. 13. Field Hospital No. 12 moved February 6 to large stone barracks—Caserne la Marche—at Toul, where it established a 400-bed hospital for the divisional sick.¹² As these barracks were large and commodious, and readily adapted

to hospital purposes, the field hospitals here supplemented their normal equipment by the addition of large quantities of supplies suitable for the proper maintenance of a semipermanent hospital.¹²

Field Hospital No. 2 arrived at Toul on February 18 and established an annex to Field Hospital No. 12 for the care of contagious cases. It operated until April 2, when it was turned over to a hospital of the 26th Division.¹²

Field Hospitals No. 12 and No. 13 evacuated by train from Toul to base hospitals in the rear such cases as did not require surgical attention at Evacuation Hospital No. 1.¹⁵ This evacuation service was maintained until about April 3, when the field hospitals concerned were turned over to corresponding formations of the 26th Division.¹⁵ In this sector Field Hospital No. 13 received 889 patients (not including those triaged directly to other hospitals) and Field Hospitals No. 12 and No. 2, 2,482 patients.¹⁵ As Evacuation Hospital No. 1 received most of the wounded, these figures represent chiefly sick or gassed patients.¹⁵

The sick rate of the division at this time was three times that for battle casualties. More than two-thirds of these cases were of a minor character, and most of the patients were returned to duty in a short time direct from field hospitals.¹⁶ The prevailing diseases in the division while in this sector were respiratory or intestinal. Sporadic cases of cerebrospinal meningitis, diphtheria, scarlet fever, mumps, and measles occurred, but no epidemic developed. A camp for venereal cases was established southeast of Raulecourt, and its occupants who were able to do so were compelled to labor on road making and similar heavy work.¹⁶

MEDICAL SUPPLY UNIT

The Medical Supply unit of the division, with a large stock, was maintained at Demange-aux-Eaux in the area of the rear echelon of the division.¹⁵ An advance medical supply depot was operated by Field Hospital No. 13 at Menil-la-Tour for issue, upon request, to all organizations in advance areas.¹⁵ An advance subdepot was maintained at the dressing station at Mandres, for the distribution of supplies, by ambulance or runners to front-line aid stations.¹⁵

The 1st Division was relieved April 1-3, 1918, by the 26th Division and proceeded to the neighborhood of Chaumont-en-Vexin, where headquarters were established April 8. Then for the next 10 days the division was trained in open warfare, activities consisting chiefly of brigade and division maneuvers. Regiments now evacuated the disabled direct into the French hospitals at Gisors.¹⁷

CANTIGNY SECTOR, AND MONTDIDIER-NOYON OPERATION

The offensive launched by the Germans on March 21, 1918, against the British Third and Fifth Armies, involving the French Army on the right when the British Fifth Army retired, placed the Allies in a desperate situation. The lack of complete cooperation among the Allies on the Western Front had been appreciated, and the question of preparation to meet the crisis had al-

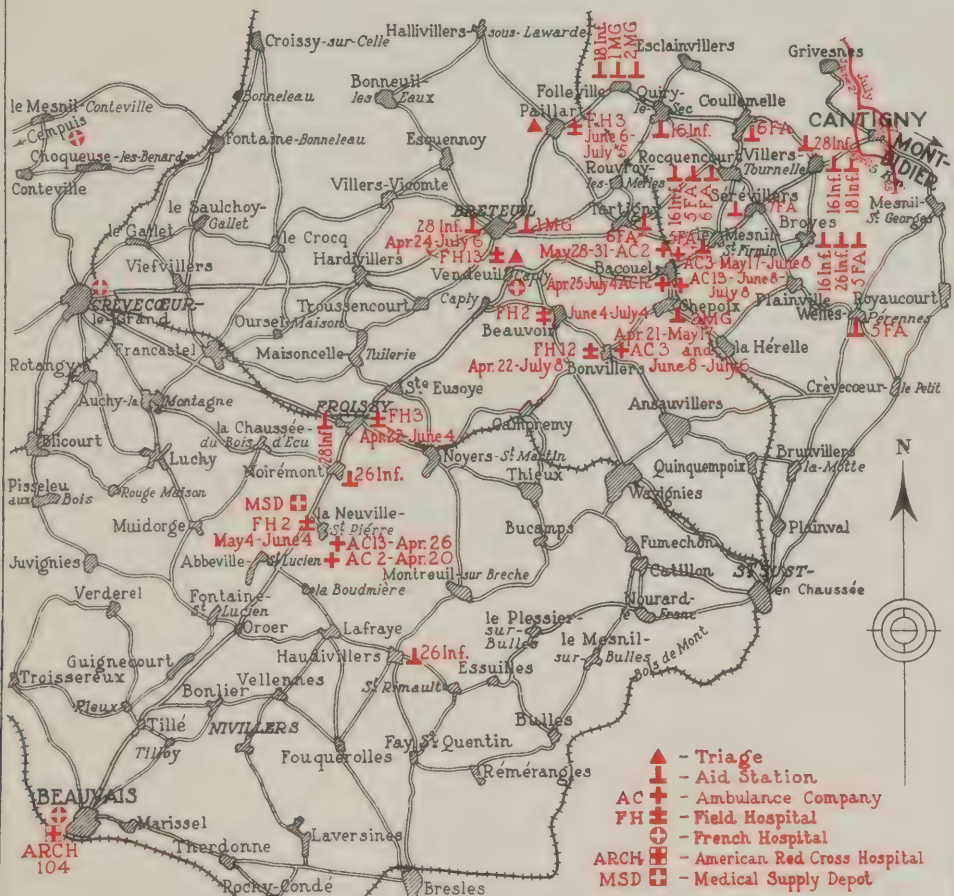
ready received attention of the supreme war council. It had been planned that reserves would be provided and would be under the direction of a member of the supreme war council, but these were not available. On April 3, Marshal Foch was made commander in chief of all the allied forces in France. In consequence of the grave crisis caused by the German offensive the building up of a distinctive American army as a tactical unit in Lorraine was postponed, though at this time there were some 300,000 American troops in France, and American divisions were ordered as expeditiously as possible into active sectors.¹⁸ Four combat divisions were then available, the 1st and 2d, then in line, and the 26th, and 42d, just withdrawn therefrom after one month's training. Also one regiment of the 93rd was with the French in the Argonne, the 41st was in the Services of Supply, and three divisions were arriving. On March 28, the 1st Division was placed at the disposal of the allied high command, and on April 17 commenced its movement toward the battle front. On April 25 it took over the Cantigny sector 4.9 km. (3 miles) west of Montdidier, there relieving French troops and becoming a part of the French First Army.¹⁷ No other American troops were in its vicinity. Its sector extended from Mesnil-St. Georges to north of Cantigny, an important position whose reduction was desirable in view of a contemplated allied offensive.¹⁷ The defenses taken over by the division were not the more or less elaborately constructed trenches such as it had occupied in other sectors, but consisted merely of shell holes or shallow "fox holes" dug in the open wheat fields.¹⁹ There was no complete barrier of barbed wire to protect the lines, and there were no communicating trenches, but construction of the front line and communicating trenches was pushed as rapidly as possible under supervision of the Engineers.¹⁹ This construction between the front line and the Bois de Villers—a distance of some 6 km. (3.7 miles)—was practically completed in one night with very few casualties, though the troops often were subjected to heavy shellfire.²⁰ During the first six weeks that the division remained in this line the sector was very active; the remaining period was active. Battery positions were made untenable by high-explosive and gas shells. Towns where the different unit headquarters were established were heavily bombarded, while roads leading to them often were under interdiction fire. On the night of May 3, a very heavy bombardment was concentrated on Villers-Tournelle, where approximately 12,000 shells struck the town at the rate of 50 to 100 a minute, causing 900 casualties, including 50 killed.²¹ The villages of Broys, Villers-Tournelle, Coullemelle, Roquencourt, and Serevillers were entirely destroyed and their sites constantly subject to shelling and bombing. Air raids were frequent and severe.

CANTIGNY OPERATION

On May 27, 1918, the Germans attacked Chateau-Thierry, and when the French appreciated how serious and how successful was the onslaught they began to withdraw both their air squadrons and the supporting artillery from the Cantigny sector. On the 28th the 1st Division made the first American offensive of the war—as contrasted with a raid—and captured the village of Cantigny.²² This was very strongly situated on rising ground in front of a

FIRST DIVISION CANTIGNY SECTOR AND MONTDIDIER-NOYON OPERATION APRIL 25—JULY 7, 1918

Scale in Kilometers
0 2 4 6 8 10



References: Drawn from Official Maps MONTDIDIER & BEAUVAIS
Positions of Medical Units from Reports of Division
Surgeon, First Division.

Battle lines, taken from existing ODS and maps, are approximate.

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wood which afforded protection to enemy reserves. It lay within a small salient of the German line, was well equipped with machine guns, and protected by trenches some 637 meters (700 yards) to its front.

The 28th Infantry attacked at 6.45 a. m., and along a front of 2,002 meters (2,200 yards) advanced its lines from 273 to 1,456 meters (300 to 1,600 yards), taking all objectives. Seven strong counter attacks, beginning May 28 and ending May 30, were delivered by the enemy in a vain attempt to regain the ground lost. This regiment was then relieved by the 16th Infantry.⁶ Be-



FIG. 47.—Regimental aid station. 28th Infantry, 1st Division, near Cantigny, May 28, 1918

cause of determined German efforts to retake the salient, losses were greater after the attack than during it. Beauvais, where a Red Cross hospital was located, though 38.4 kilometers (24 miles) to the rear, suffered very severely. Hospitals were not immune from attack, and operation of the evacuation service, particularly at night, was very difficult.²³

MONTDIDIER-NOYON OPERATION

The infantry attack launched by the Germans on the night of June 8-9, 1918, between Montdidier and Noyon, included the left of the French division which was on the right of the 1st. Though the latter was not directly engaged, it was subjected to intense artillery preparation and its units partici-

pated both defensively and offensively in several raids.⁶ The German lines were halted from 2 to 5 km. (1.2 to 3.1 miles) in the rear of the front which they attacked, and continued the assault during the next five days.² Activities then diminished rapidly, relatively speaking, but from the time that the 1st Division captured Cantigny until it turned that sector over to the French, there was continuous heavy shell fire, with gas attacks and many raids, though all of the last mentioned were repulsed successfully. Service in this sector proved to be typical active trench warfare. It was conducted under the general direction of the French.²⁴



FIG. 48.—Evacuation of wounded from regimental aid station, 28th Infantry, near Cantigny, May 28, 1918

In the latter part of June, orders were received for the relief of the 1st Division by the French 152d and 166th Divisions, whose commanding officers took over command of the sector on July 7 and 8.⁶ The 1st Division was gradually withdrawn from the Cantigny sector and arrived in an assembly area near Beauvais on July 7, the sanitary train being near St. Omer-en-Chaussee.²⁴

MEDICAL DEPARTMENT ACTIVITIES

The history of the service of the Medical Department while in the Cantigny sector is of peculiar interest for the reason that here were applied,

for the first time, certain innovations in organization, equipment, and methods which eventually came to be utilized along our entire front. Among these the following were important: Designation and equipment of individual field hospitals to perform triage service and to care for nontransportable wounded, gassed, and sick, as the case might be; assignment of operating teams and a *groupe complémentaire* (made available by the chief surgeon, A. E. F.) to the hospital for nontransportable wounded; establishment of a field medical supply depot in the immediate rear of the division; replenishment of supplies at the front by ambulances which carried forward such articles as splints, blankets, and litters which they had exchanged for those they had brought with patients to hospitals; assignment to the regulating station which served the area in which this division was operating of a medical officer charged with railway evacuations of American casualties and related duties, and appointment of a medical officer who represented in the field the medical group attached to the fourth section of the general staff. This group, after the reorganization of the American Expeditionary Forces in February, 1918, represented the chief surgeon with that section and became vested with responsibility for the medical service of troops in the zone of the armies. One of its members was now directed, on April 9, to carry out, in reference to the medical service of the First Division, the verbal orders given him by the commander in chief.²⁵ His orders were made of the broadest character, for it could not be foreseen exactly what questions would arise nor how they should be met. He was also accredited, May 8, to the commanding general of the French Army, to which the 1st Division would be attached, as liaison officer for all questions dealing with its medical service. His duties were, on a small scale, those of a corps or army surgeon, and pertaining to supervision of medical department activities within the division, evacuation of its casualties, provision of supplies, and maintenance of contact between the divisional medical service, on one hand, and the medical group at General Headquarters, on the other. He was also the liaison officer between that service and the chief surgeon of the French Army to which the division was attached. Duties assigned him at this time and services performed by him forecast those later discharged by corps and army surgeons and formed a step in their evolution. Further allusion to them will be found at appropriate points in the following text.

The division surgeon's office was located at Chepoix until June 5,²⁶ when it moved to Breteuil, where it remained until July 7, when the division left the sector.²⁶

SERVICE WITH REGIMENTS, ETC.

Great difficulty was experienced in establishing aid stations in positions that would provide sufficient space and reasonable safety. Deep cellars, covered with débris from destroyed superstructures, generally were utilized, though in some localities, notably Broyes and Mesnil-St. Firmin, it was necessary to excavate, the labor being performed by regimental medical personnel, assisted as opportunity permitted by the Engineers.²⁰ Battalion aid

stations were rough dugouts in the sides of the hills behind the trenches or holes in semiprotected positions in the woods.²¹ Back of the most advanced positions regimental and battalion aid stations were located in houses and barns, in various stages of dilapidation except those in the extreme rear of the area. From 10 to 20 men from the several ambulance companies were on duty with each Infantry regiment.²⁷ During the Cantigny operation all available members of the ambulance companies were thus attached to the Infantry, and when, early in May, the detachment of Medical Department men with the 18th Infantry was severely gassed, it was for a time completely replaced by a detachment from Ambulance Company No. 2.²⁷

This sector having a narrow front, the division was in echelon, one brigade at a time occupying the lines, with brigade headquarters at Serevillers.²¹ The two regimental post control stations (at first the only ones employed) and the aid stations near them were located at Broys and Villers-Tournelle, with the battalion post control and aid stations between those points and the front-line trenches.²¹ When, in June, the line was extended northward, additional regimental aid stations were opened at Quiry-le-Sec and Esclainvillers.²⁸ Other regimental aid stations in this sector were located as follows: Folleville, Breteuil, and for the Engineer regiment, Varmaise.²⁹ Other aid stations were located for the ammunition train in Bois Renault, for the Artillery at Mesnil-St. Firmin, Tartigny, and Serevillers, and for Machine Gun Battalions at Folleville, Breteuil, Belleassise Ferme, and Chepoix.¹⁹

Medical personnel with troops were occupied day and night caring for the disabled. "The regimental medical personnel not only gave all possible attention to the wounded arriving at the stations, but generally accompanied squads of combat troops in sorties and raids. Until communication trenches were established, evacuation was necessarily in the open. Because of visibility and the activity of enemy artillery, aided by aeroplane observation, it was almost impossible to remove wounded from the advance stations until after dark, though frequently in the daytime individual ambulances would rush down the road to Broys or Villers-Tournelle, in response to an urgent call from an overcrowded aid station or to remove some desperately wounded soldier."³⁰ The Signal Corps had connected all parts of the sector by telephone, and this made it possible for the Medical Department to receive prompt notification of the location of wounded, and in spite of the fact that roads were heavily shelled they were transported to hospital in the shortest possible time.³⁰

AMBULANCE COMPANIES

The director of ambulance companies was located at Bacouel.³¹ With the exception of Ambulance Company No. 2 (horse drawn) all ambulance companies were motorized by April 1.³² On April 26, additional transport was provided by United States Army Ambulance Section 649, with 20 Ford cars.³¹ This unit established headquarters at Bacouel and evacuated patients from all parts of the sector.

Ambulance Company No. 13 established an advance dressing station at Mesnil-St. Firmin on April 23, but this was discontinued three days later when the unit moved to Convillers.³³ Here it was engaged in evacuating the wounded of the division and in supplying litter bearers to regiments until June 8, when it took over the dressing station at Bacouel from Ambulance Company No. 3 and operated it until it was closed a month later.³³

Ambulance Company No. 12 had established an advance dressing station at Bacouel on April 25 and operated it until May 17, when it turned over to Ambulance Company No. 3, this unit, as mentioned above, giving place in turn to Ambulance Company No. 13.²⁷ Ambulance Company No. 12, however, remained attached to the station until July 4, detailing litter bearers and assigning ambulances to the several regiments.³⁴

Ambulance Company No. 3 was stationed at Bonvillers on April 21, whence it furnished litter-bearer contingents to regiments to 30 per cent of its strength, while its ambulances evacuated patients to Beauvais.³⁵ On May 17 it took over the dressing station and medical supply depot at Bacouel and also conducted there, until June 8, a hospital for the slightly wounded. This latter formation then had to be discontinued because of constant bombing by enemy airplanes.³⁵ On June 8 the company returned to Bonvillers and resumed its evacuation service of Field Hospital No. 12.³⁶

Ambulance Company No. 2 also was stationed at Bacouel and operated in connection with Ambulance Company No. 12 from May 28 to 31.³⁷

Bacouel was 7 km. (4.3 miles) from the front line, 1 km. (six-tenths of a mile) south of the axial road, Le Mesnil-Bretenil, but adequately supplied with roads to make it a good evacuation relay point.³⁸ The place was subject to occasional enemy shell fire, but as it was not occupied by other troops and was not the center of much traffic or enemy interest, it was better adapted to dressing-station purposes than any other available location.³⁸ The station occupied a building protected by sandbags. It was expanded, when necessary, into neighboring houses. In addition to its other duties it operated an infirmary and, until June 8, when protracted bombing and shelling necessitated its discontinuance, a hospital for the slightly wounded.³⁵ The village of Bacouel was made the station of reserve of ambulances regulated from that point, but the main reserve of ambulances was at Bonvillers, where one ambulance company was held in reserve.³⁸ The remainder of the ambulance companies stayed well to the rear, at La Neuville-St. Pierre, but as many of their vehicles as were needed were attached to forward units.³⁸ Evacuations were made habitually at daybreak and at nightfall except when, during the Cantigny offensive, the enemy concentrated attention on attacking troops, thus permitting constant ambulance operation during full daylight. When the line was extended northward after that operation a reserve ambulance park was established at Paillart and ambulances were advanced as needed to the battalion aid stations in front of Quiry-le-Sec and Esclainvillers.²⁶ The slightly sick were retained at Paillart; the others were sorted and sent farther to the rear.

In the sector west of Montdidier the 1st Division employed the following evacuation system:³⁹ Ford ambulances, including some of those from the United States Army Ambulance Section 649, were permanently posted at aid stations in all towns within 7 km. (4.3 miles) of the front, two or more being kept at the more active centers, Broyes and Villers-Tournelle. More ambulances as needed were obtained by dispatching a runner to the station in a neighboring town or by telephone or runner to Bacouel, where a reserve of cars was kept. A number of cars belonging to the evacuation ambulance company from time to time also served the French.

Three ambulance circuits, front, rear, and evacuation, were maintained. The front circuit, conducted by Ford cars regulated from Bacouel, took patients from the ambulance heads to the Bacouel dressing station, where all patients were inspected, and given emergency treatment and stimulating drinks, and where they underwent a tentative triage and were transferred to rear circuit ambulances.

The rear circuit took patients in heavy ambulances to the divisional hospitals. Nontransportable surgical patients who had been sorted out at the dressing station were taken direct to Field Hospital No. 12 at Bonvillers; all others were sent to Field Hospital No. 13 for distribution according to the following schedule, prescribed April 20 by the surgeon of the Sixth Corps (French) under which the 1st Division was operating:³⁹

(a) Wounded:		Destination
Slight and moderate cases-----	Crèveœur, distant 18 km. (French hospital).	
Serious-----	Beauvais (Felix farm hospital, later American Red Cross hospital), distant 25 km.	
Very serious and nontransportable-----	Bonvillers.	
(b) Sick:		
Slight and moderate cases-----	Froissy.	
Serious cases-----	Crèveœur.	
(c) Gassed:		
Slight cases-----	Froissy and La Neuville-St. Pierre.	
Moderate cases-----	Cempuis (French gas hospital).	

The evacuation circuit was that in rear of the divisional hospitals. It conveyed patients from divisional hospitals to evacuation hospitals farther in the rear.³⁹ Serious cases were sent in ambulances, but when necessary the lighter cases were sent in trucks.

During the operations against Cantigny, May 28, the following disposition was made of the sanitary train. At Villers-Tournelle, Ambulance Company No. 13 maintained a station for slightly wounded who were then conveyed to the rear on trucks held at that town for this purpose.²⁸ This place became the main center of evacuation and ambulance control, as after completion of the attack the wounded transport could reach Cantigny and the ravines in its rear.²⁸ Prior to the Cantigny offensive the dressing station at Bacouel then operated by Ambulance Company No. 3 was augmented by Ambulance Company No. 2, one of the companies on duty there then serving by day, the other by night.²⁸ It also operated as a preliminary triage, sending the

slightly wounded on trucks directly through to Froissy, La Neuville or Crèvecœur, seriously wounded to Field Hospital No. 13 at Bonvillers, for hospital care, and all others to the same point for further distribution.²⁸

FIELD HOSPITALS

The director of field hospitals was located at Bonvillers. With the exception of Field Hospital No. 2 (horse drawn) all field hospitals had been motorized by April 17.³⁴

One of the earliest duties devolving upon the medical liaison officer and the division surgeon in this sector was the location of the field hospitals. This was difficult, for not only did such locations have to meet tactical requirements but also had to conform to resources for shelter. Buildings at all suitable



FIG. 49.—Field Hospital No. 13, near Vendeuil-Caply, July 2, 1918

were few and tentage was scarce. Field Hospital No. 13 was established, in an orchard near Vendeuil-Caply, on April 24, in six United States Army ward tents, four French Dixon tents, and two turtle tents, and admitted the first patients received in hospital in the sector.⁴⁰ Until July 5, 1918, when it was closed, it operated as a triage and gas hospital, receiving 4,418 patients, including most of the wounded.⁴⁰ One part of this unit conformed, to a degree, to the triage of the French, which was a formation where patients were sorted, segregated, and recorded, but received no professional service other than bathing and necessary changes of dressings. The French stressed the importance of this procedure, which was an innovation in our service. The sick and wounded not requiring immediate operation were sent by the French immediately to base hospitals in the interior, while those requiring immediate operation were sent direct to a specified hospital. In this sector the latter were sent to an *auto-chir* at Grandvillers where they were kept seven days or

longer.⁴¹ Field Hospital No. 13, performed the duties of a triage; for instance, it sent to the hospital for nontransportables the most serious cases (some equally serious cases reached that unit direct from the dressing station) and other patients to other appropriate hospitals, but it also, unlike the French triage, rendered actual hospital service to a large number of patients. A large percentage of the latter were gassed patients, special arrangements having been made and special equipment provided for their treatment. In addition, some sick and slightly wounded were cared for. During the 24 hours which ended at 2 p. m., May 5, it received 634 cases, most of them coming from the 18th Infantry.²⁴ This was the first large group of gassed cases admitted to one of our field hospitals. Some of these were transferred to Field Hospitals No. 2 and No. 3 and others to the French gas hospital at Cempuis.⁴² At this time no American uniforms were available for issue to these patients after bathing, and so, until May 10, when such uniforms were received, our convalescent gassed patients wore French clothing.⁴³ The French turned over to this unit a bathing center at Vendeuil, and after May 16, it was served by a portable laundry unit.

Although the position of the hospital was clearly indicated by huge red crosses, air raids against it were frequent, and on June 14, when the hospital was bombed, four men were killed and three wounded.⁴⁰ Later it was shelled.⁴⁰ The French had begun to place an ammunition dump near this hospital on April 25, but when their attention was called to it by the medical liaison officer it was moved a few days later.

Field Hospital No. 2, at first in reserve, was opened on May 5 at La Neuville-St. Pierre to care for the sick of the division.⁴⁰ It remained at this place until June 4, when it moved to Beauvoir and operated there until July 4.⁴⁰ This unit cared for most of the sick of the division, recording 1,134 admissions in this sector. On June 4 it had 428 patients under treatment.⁴⁰

Field Hospital No. 3 operated at Froissy, opening there on April 22 in a building (used for operating purposes) and in tentage.⁴⁰ It was designed to care primarily for gassed cases. While at Froissy it received 465 such cases and some slightly wounded. In June 6 it moved to Paillart, where it cared for gassed patients and some seriously wounded.⁴⁰ While at this point it operated also as a triage for the left flank of the division, whose lines were then extended northward.⁴⁰

Field Hospital No. 12, after three other locations had proven impracticable because of lack of accommodations, arrived at Bonvillers on April 22 and opened in a large château.⁴⁰ This building had been assigned by the French as division headquarters, but when the division commander learned that it was needed for the care of the gravely wounded he promptly relinquished it and located his headquarters elsewhere. The hospital augmented its housing space by Army ward tents so that sufficient accommodations were provided for all cases sent to it. On April 28 the personnel of this hospital was increased by Surgical Teams No. 2 and No. 3, including their Army female nurses, and Mobile Surgical Unit No. 2, which joined the division.⁴⁰ A second similar unit which had joined was held in reserve. Field Hospital No. 12 cared for

the nontransportable wounded, of whom it admitted 1,220 between April 26 and July 2.⁴⁰

After the Cantigny operation five surgical teams operated in the field hospitals, as the evacuation hospitals in the rear, with the exception of that at Beauvais, suffered from a shortage of operating teams and, consequently, could care for operated cases only.⁴⁴ Mortality among nontransportable wounded averaged about 25 per cent, though this varied considerably from time to time. The mortality in gassed averaged 1.7 per cent.⁴⁵

Field Hospital No. 12 was the first unit of that character designed in our service for the care of nontransportable wounded, and it was equipped accordingly. It was also the first to be supplemented by a *groupe complémentaire* and by surgical teams from outside sources. In emergencies this hospital also cared for a number of the seriously gassed.

It should be noted that though field hospitals were specialized, each of them, if circumstances required, was expected to care also for patients suffering from conditions other than those they were especially designated to receive. A certain elasticity in this matter was found essential. Thus, on May 16, Field Hospital No. 2 was treating 3 sick and 189 gassed; Field Hospital No. 3, 85 sick, 159 gassed, 38 wounded; Field Hospital No. 12, 8 sick, 43 gassed, and 16 nontransportable wounded; and Field Hospital No. 13, 29 sick, 37 gassed, and 8 wounded.⁴⁶ Field Hospital admissions in this sector totaled 7,689.⁴³

MEDICAL SUPPLY UNIT

An advance medical supply depot for the division was located first at La Neuville and later at Bacouel.²⁹ During the first month of service in this sector its supplies were very limited, as the amount carried by the division was insufficient and it was impossible to replenish supplies as contemplated, because of the inability of regulating stations to forward matériel north of Paris.⁴⁷ Supplies, including bedding and tentage, were obtained from local French depots, but as these depots were small the amounts of supplies and of other materials obtainable were inadequate. Also, the French did not carry in stock a number of articles listed on our medical supply tables, and our large requisitions could be filled only after being referred to Paris, and with consequent delay. After the first month supplies in large amount were obtained from the American Red Cross, needed articles being brought to Beauvais by truck and thence forwarded by the divisional Medical Department trucks.⁴⁷ On April 6 the Medical Department representative of G-4 reported that it was essential that an advance supply depot on trucks be established and that this be replenished by rail. When he visited Fleury on April 30 he secured almost all medical supplies then needed by the division.⁴⁸ By May 4 the medical supply unit had arrived and was serving satisfactorily.

After May 16 two movable disinfesting plants, each capable of serving 16 platoons in 12 hours, and one "sterilab" water purifier with an output of 1,200 gallons per hour, arrived.⁴⁶ On May 18 needed dental outfits were received and distributed.⁴⁹

EVACUATIONS TO THE REAR

On April 13 the medical representative of G-4, G. H. Q., wired as follows to the head of the fourth section of the American general staff:⁵⁰ "French evacuation hospitals will be situated so far in rear that it is necessary to amplify one field hospital, or perhaps two, for the care of nontransportable wounded. Recommend two *groupes complémentaires* (mobile surgical units) and two operating teams without female nurses be held in reserve. One *auto-chir* probably will be required later but not recommended now."

According to orders from the French mission to the chief surgeon French Fifth Army, evacuation of American casualties in rear of the field hospitals was to be effected by the medical representative of the fourth section, general staff, though the French offered to furnish such ambulances for that purpose as might be available.⁵¹ Fearing that these would be inadequate, the medical representative, G-4, G. H. Q., requisitioned a United States Army ambulance section, which was promptly furnished.⁵¹ In effecting this evacuation the liaison officer was requested to comply with the French system, which did not vest in the army surgeon responsibility for care of casualties, until these had arrived in the evacuation hospitals.⁵¹ The division surgeon, under this system, was responsible for all evacuations to the French evacuation hospital, which was not more than 16 or 24 km. (10 or 15 miles) from the front. At this time it was decided that nontransportable cases, and these only, should be operated on in the divisional hospitals, and that only one of these field hospitals should be equipped for that purpose.⁵¹

Evacuations to the rear of divisional units were made to the French hospitals mentioned above in the discussion of the ambulance service, there being available at first neither an American evacuation hospital nor facilities for evacuation by rail directly in rear of the division.⁵² While the need for additional motor transport had been met by the assignment of United States Army Ambulance Section No. 649, efforts to provide American Army hospitalization in rear of the division were not at first successful, though the need was stressed for several reasons. Differences in language, for instance, had caused inevitable misunderstandings which, despite the best efforts on the part of the French, had delayed ward service in some cases and led to mutual embarrassments.⁵² A very serious administrative difficulty arose through the fact that French hospital trains, under their method of allocating casualties, were distributing American patients to numerous French hospitals scattered throughout the country and thus they were lost to our authorities for months at a time.⁵² Some deaths occurred which were not reported for very long periods.⁵² Nothing but an emergency of the gravest nature was deemed justification for the continuance of the existing methods.

With a view to their remedy, permission was requested of the French to install an American evacuation hospital at Beauvais.⁵³ While no such hospital was available in the American Expeditionary Forces at that time, some evacuation hospitals were expected daily from the United States, and it was hoped that one or more of these would arrive in time to meet the needs of the 1st Division. The matter was settled temporarily, however, by the decision

of the French that no American evacuation hospital could be established in the rear of the 1st Division.⁵³ This ruling was unavoidable, in fact, in view of the limited facilities for railway evacuations near the 1st Division's sector: an evacuation hospital at Beauvais served by American hospital trains, to move patients from that point to American base hospitals in the interior, would have set up an additional current of travel and necessitated a practically separate line of communication for the service of a single division, which comprised but one part of a French army. Manifestly this arrangement was impossible. On May 5, it was suggested to our general staff that it learn from the French whether they would approve the location of an American Red Cross hospital at Beauvais under command of an officer of the Medical Corps.⁴² It was proposed, also, that this hospital be essentially for Americans, but otherwise be operated and evacuated as a French hospital. It was desirable that such a hospital admit surgical cases from the 1st Division and provide an annex for mumps and measles. Gas cases were to continue to be sent to the French gas hospital at Cempuis. At this time, too, difficulty was being experienced in having patients admitted to French evacuation hospitals, though this was corrected as soon as it was called to the attention of the French army surgeon.⁵⁴ In view of the proposed establishment of a Red Cross hospital for the 1st Division, the liaison officer recommended (May 12) that an evacuation hospital which had now become available be held in reserve for the 2d Division, which he understood would soon enter a sector adjoining that of the First, or would relieve it. On May 13, it was arranged that the Red Cross hospital in question be under command of a French officer and that it occupy the École Normale at Beauvais.⁵⁵ Considerable excess Red Cross personnel had accumulated in Paris at this time as a project for the establishment of a Red Cross hospital at Chalons had been abandoned. The medical group with G-4 was also arranging for *groupes complémentaires* and for supplementary teams to be sent up when the situation demanded it. Later, it was decided that the Red Cross hospital should occupy the École Professionnelle at Beauvais, which was well adapted to hospital purposes and accommodated 230 beds, with ground space for 200 more in tents if necessary.⁵⁶ It had been used for some two weeks by the French for hospital purposes. The Red Cross personnel was reënforced by others, including officers of the Medical Department; supplies furnished by the Red Cross were installed and the unit began to operate on May 28, as American Red Cross Hospital No. 104.⁴⁴ The first evacuation by French hospital train from this hospital was arranged for on May 30.⁵⁷

At this time the direct transfer of American patients to American Expeditionary Forces base hospitals was not practicable, but this establishment insured them initial care in rear of the division by personnel, most of whom, commissioned and enlisted, belonged to the Medical Department, and all of whom, except the commanding officer, were Americans. An agreement was made later whereby all French hospital trains carrying American casualties were halted near Paris so that these patients might be removed and transported by ambulances to American hospitals in that city.⁵⁸

Location of this militarized Red Cross hospital at Beauvais was the first occasion when a unit of this kind had been established in our zone of the armies. Such use, of course, was a radical departure from the formerly accepted sphere of activity for Red Cross units, but under the circumstances it was a welcome innovation.

Beauvais was heavily bombed on a number of occasions, especially on May 31, when one French hospital was so badly damaged that it had to be abandoned.⁵⁹

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CHAPTER X

AISNE OPERATION, MAY 27 TO JUNE 5, INCLUDING VAUX AND BELLEAU WOOD, JUNE 6 TO JULY 15, 1918; THE 2D AND 3D DIVISIONS ^a

On May 27, 1918, the German Army began another great offensive, this time on the line between Soissons and Reims. Overwhelming the French divisions along the Chemin des Dames, the Germans advanced southward until, on May 30, they had reached the Marne between Mont-St.-Pere and Brasles.¹ Turning eastward the next day they pushed forward some 6 miles along the Ourcq, and on June 2 and 3 continued their advance, though at a considerably slower rate, the offensive then soon spending its force.

The great salient made by this German offensive had a western front extending from a point on the Oise River about 4 km. (2.4 miles) southeast of Noyons southward to Chateau-Thierry, a southern front extending eastward from Chateau-Thierry, along the Marne to Dormans, and a southeast front extending from Dormans to the old German line north of Reims.

It was during this offensive, when Paris was again menaced, that American divisions entered the Marne region in increasing numbers to operate under tactical command of the French as part of their corps and armies. The 2d and 3d Divisions were hurried into the lines at the apex of the salient, the former to the west of Chateau-Thierry,² the latter, after participating in the defense of the bridgeheads there, to the east of that town.³

Strictly speaking, the Aisne operation occurred between May 27 and June 5, 1918.⁴ It was the first phase of the German drive toward Paris, and the 2d and 3d Divisions were, as a matter of fact, the only American divisions engaged here between the dates in question. Between the close of this operation (Aisne operation) and July 15, the 2d Division took the towns of Bouresches, Vaux, Belleau Wood, and Bois de la Roche.²

On June 19, 1918, a fourth section of the general staff, known as G-4, Paris group, was organized and functioned as the fourth section of an army at that place. This section was charged with the supervision of the supply and evacuation, except the supply of artillery ammunition, of the American troops engaged in the operations of that period against the Marne salient with the French Seventh Army.⁵

THE 2D DIVISION

On May 30, 1918, the 2d Division was suddenly ordered from Chaumont-en-Vexin to an area northwest of Meaux, leaving early the next morning.⁶ Moving 50 miles by truck to a location near its future position, the Infantry

^a Brief mention will be found of the 4th, 26th, and 28th Divisions, which entered the Marne area during the period covered in this chapter.

reached Meaux and soon thereafter took position near Montreuil-aux-Lions, where it relieved exhausted French troops on a 12-km. (7.4 miles) front, blocking the Paris-Metz highway west of Chateau-Thierry.² The Germans held the commanding Hill 204 and a line running through Vaux, along the railroad to Bouresches and thence through Bois de Belleau, Torcy, and Bussiares to Chezy-en-Orxois.⁵ They had been opposed by two depleted French divisions, worn out by five days of battle. On the right the French Thirty-eighth Corps had one division north of the Marne, and on the left was the French Seventh Corps.⁷

On June 1, French Army orders directed the concentration of the 2d Division around Montreuil-aux-Lions, in support of the two French divisions which held a line in the rear of Bussiares, Torcy, Hill 133, south of Bouresches, and Hill 138.⁶ The French had orders to drop back through the American lines.⁶ Early on the 2d day of June the 23d Infantry, with some other companies, was sent to the left to fill a gap between Gandelu and Bois de Veuilly.⁶

Command was taken over officially by the Americans June 4, the two French divisions going to the rear on the night of June 3-4.⁸

By June 5, the remainder of the organization of the 2d Division had arrived,⁶ and the division commenced a series of vigorous attacks on the following day.² The line then extended from the southwest corner of Bois de la Marette on the right, through Bois des Clerembauts, Triangle Ferme, Lucy-le-Bocage, woods northwest of Lucy-le-Bocage, Hill 142 (a point on the Champillon-Bussiares road), 800 meters (872 yards) north of Champillon.⁶ Triangle Ferme was the dividing line between the two brigades.

Early in the morning of June 6, the 1st Battalion of the 5th Marines, in conjunction with the French 167th Division, attacked toward Torcy. The attack was successful and the enemy line penetrated to a depth of 1 km. At 5 p. m., the 4th Brigade attacked on the line Bouresches-Torcy. The town of Bouresches was captured, but the advance was stopped in the Bois de Belleau. On June 7, 8, and 9 attacks were continued, without artillery preparation. A little progress was made each day, but it was slow and expensive.⁶ On the morning of June 10, after thorough artillery preparation, the 4th Brigade again attacked in the wood and gained a line through Hill 169.⁶ Another attack, on the 11th, gained all of the wood except the northwest corner.⁶

French troops having taken over a part of the line of the 3d Brigade, that brigade extended its left northward to include Bouresches on the night of June 13-14, leaving the 4th Brigade only Belleau Wood.⁹

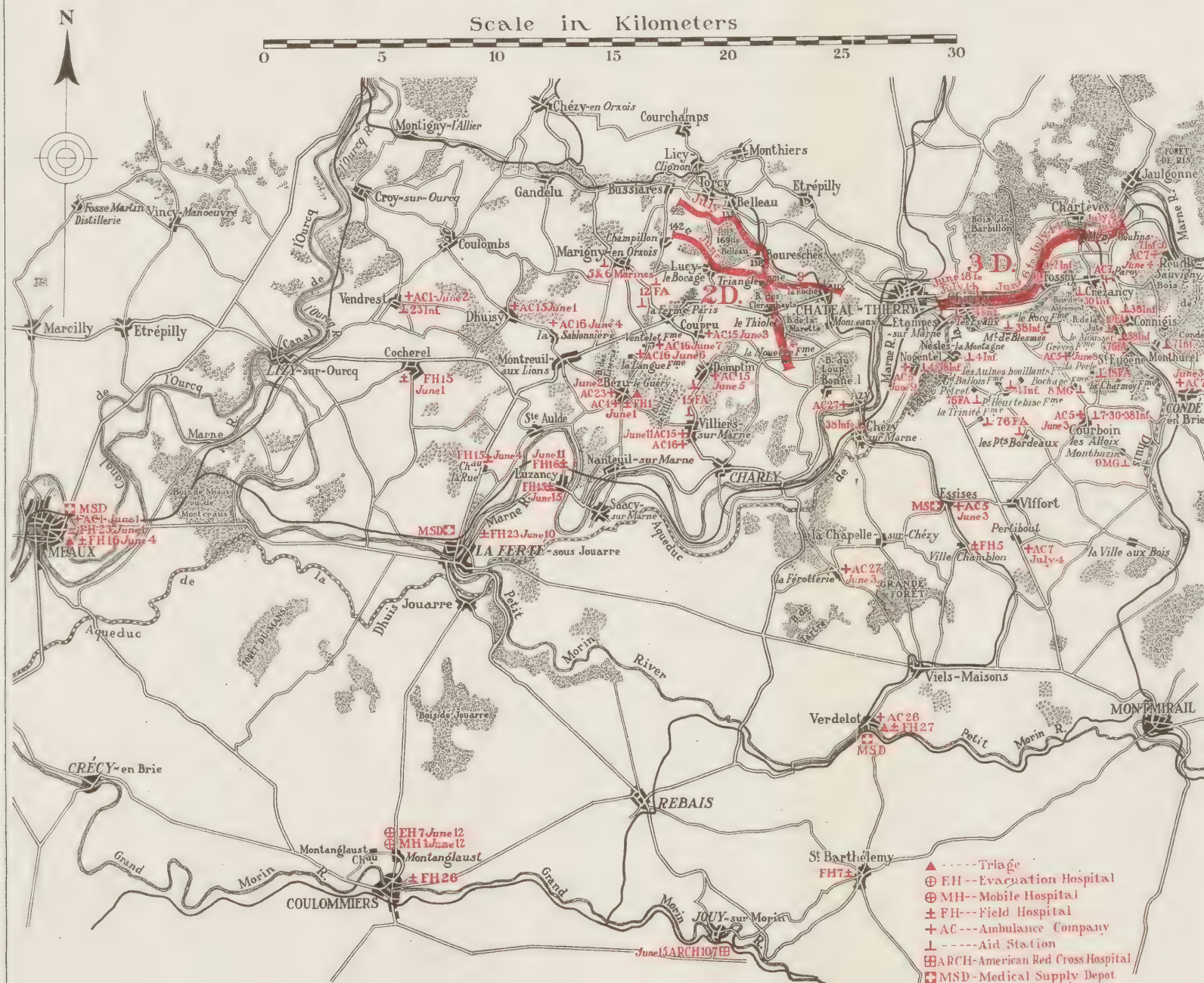
On June 15, the 7th Infantry, 3d Division, was brought into the sector of the 4th Brigade, and marines holding the line were relieved for rest. On June 23, the 4th Brigade attempted again, but unsuccessfully, to take the northwest tip of the woods, but on June 26th, with the aid of concentrated artillery fire, they finally cleared Belleau Wood of Germans.⁶

July 1, the 3d Brigade, after a 12-hour preparation by artillery, attacked and captured Vaux and Bois de la Roche.⁸ The enemy counterattacked next

CHÂTEAU — THIERRY SECTOR

SECOND DIVISION, MAY 31 — JULY 9, 1918.

THIRD DIVISION, JUNE 1 — JULY 14, 1918.



Battle lines, taken from existing orders and maps, are approximate.

day against the 9th Infantry, but without success. From July 7 to 9, the 26th Division relieved the 2d, which had met most desperate resistance from Germany's best troops.⁸

MEDICAL DEPARTMENT ACTIVITIES

As explained, the infantry and marines left the concentration area around Chaumont-en-Vexin early on the morning of May 31. They were transported in trucks, and by noon of that day their motor trains were under way to Meaux. They included almost all the motor transport of the division, and moved slowly.

Upon arrival in the lines regimental and battalion aid stations were established, with their respective headquarters, as the troops moved into original or new positions. These stations, for the most part, were in stone buildings in abandoned villages or in farm groups which did not offer much protection against enemy artillery fire, though some were fairly well located in stone-vaulted cellars.¹⁰ During the latter part of the operations many of the battalion aid stations were in the woods, and some dugouts were constructed, but at the best these were only splinter-proof.¹⁰

Each station had one or more ambulances with it, or within call, as conditions required and permitted. Supplies were delivered to the stations by the ambulance companies or from the ambulance head by returning or special ambulances.¹⁰

AMBULANCE COMPANIES

No sanitary train headquarters had been organized, but each section (field hospital and ambulance) functioned under the direct orders of the division surgeon.¹¹ These sections—less the Field Hospital and No. 16 Ambulance Company (both animal-drawn)—arrived at Meaux about 7 p. m. on May 31, and proceeded to their several destinations the same night.¹⁰ Because of lack of evacuation ambulances during the first few days, those of the division had to make evacuations to rear of the field hospitals in addition to performing the long haul from the front.¹⁰ United States Army Ambulance Section No. 502, with 20 Ford ambulances, arrived June 4, and working from the ambulance park at Bezu-le-Guery, evacuated from battalion and regimental aid stations, thus relieving the larger General Motor Company ambulances for the longer runs to the rear.¹⁰ By June 6, three United States ambulance sections, with 60 ambulances, were on duty with the division, in addition to its own vehicles (41 in number), not including 19 animal-drawn.¹¹ Transport service within the division was also supplemented by trucks from supply and sanitary trains, and by touring cars, but despite all these the tax upon the evacuation service was severe.¹⁰

On June 1 Ambulance Company No. 15 proceeded to Dhuisy, where it established a dressing station and dispatched ambulances to the battalion aid stations near Marigny-en-Orxios, which served the troops on the left front, namely, the 4th and 6th Marine Regiments.¹² On the following morning it commenced evacuations to Meaux. Owing to the great number of wounded,

ambulances of this company were insufficient and they were reinforced by several from Ambulance Company No. 1, which had taken station at Bezu-le-Guery.¹³ On June 3, the station at Dhuisy was closed and Ambulance Company No. 15 moved to Coupru, and thence, on June 5, to Dompnin, establishing a dressing station at each place, while its ambulances continued to serve the left front. On June 11, the company was ordered to Villiers-sur-Marne, and there operated a station for the slightly wounded, which it maintained until the division was relieved.¹⁴

Ambulance Company No. 1 had moved to Bezu-le-Guery on June 1 and established liaison with the front, but on June 2 it moved to Vendrest, where it established a dressing station at a place then occupied by a battalion aid station of the 23d Infantry.¹³ It distributed ambulances to the aid stations of this regiment and to those of other troops on the left front. On June 4 it returned to Bezu-le-Guery, and there remained during the rest of its stay in this sector.¹³ On July 1, in preparation for the offensive against Vaux, it sent ambulance dressing station personnel and equipment to the 9th Infantry to reinforce its aid stations.¹⁵ An advance medical supply dump was provided in front of the regimental aid station on the route of evacuation from battalion aid stations, and returning ambulances were utilized to carry needed material forward.¹⁶

In anticipation of needs that would develop when the attack should have progressed sufficiently, two large vaulted cellars in Monneaux were made ready for use as battalion aid stations.

Ambulance Company No. 23 began operating an ambulance post at Meaux on June 1, but the next day, leaving four ambulances to serve the 23d Field Hospital, it moved to Bezu-le-Guery, where it remained until the division was relieved. At this point it operated in conjunction with Ambulance Company No. 1.¹³

Ambulance Company No. 16 (animal-drawn) reached Cocherel by marching, on June 3. The next day it proceeded to La Sablonnières and to La Longue Ferme, where it established a dressing station at 7 p. m. on June 6. This was moved next day one-half kilometer (0.31 mile) up the road to Vertelet Ferme, making it more accessible to the walking wounded. It remained at this location until the division was relieved.¹⁴ On June 4 the 19 animal-drawn ambulances of this company were distributed among the artillery regiments and permanently attached to the several batteries, thus securing them ambulance service when in positions not accessible to motor vehicles. These ambulances accompanied the batteries in their frequent shifts of position.¹⁰

The ambulance head was established at Bezu-le-Guery on June 3 and all ambulances were pooled for service directly under the orders of the director of ambulance companies.¹⁰ Location of the triage here also facilitated coordination and conservation of the ambulance service, both to forward points and to the rear. During attacks in which ambulances were insufficient for rapid evacuation of all wounded, trucks of the sanitary train were utilized, and if these did not suffice trucks from the supply train were called for.¹⁰

As all telegraphic communication had to be in code, a system of numbers was used to designate regiments, battalions, or places and their needs. Each regiment was given blocks of ten, so that the 1st regiment had Nos. 11 to 19, the 2d Nos. 20 to 29, and so on. A simple telephone call, "42—three Jones," indicated that the 4th Regiment, 2d Battalion aid station, desired three ambulances.¹⁰

From the outset ambulance company litter bearers were sent to the front to supplement regimental litter bearers as circumstances required and as the number available permitted. As many as 160 at one time were detached from



FIG. 50.—Church at Benu-leGuery, France, used as a ward for wounded by Field Hospital No. 1, 2d Division, June 16, 1918

their companies for this duty.¹⁷ They were usually sent forward in ambulances returning toward the front. Relay litter-bearer posts were established between battalion aid stations and ambulance posts when litter portage was long and ambulances could not reach forward stations.¹⁷

FIELD HOSPITALS

Field Hospital No. 1 established a triage at Bezu-le-Guery, where it remained, occupying the church, a neighboring school building, and tentage. It cared for the seriously wounded (until Field Hospital No. 23 was established at La Ferte-sous-Jouarre) and gassed cases, bathing, treating, and dressing the latter at the rate of 100 an hour.¹⁸ This location was from 1 to 8 km.

(0.6 to 5 miles) from the battalion aid stations, which were evacuated to it through two dressing stations about midway between it and the front.¹⁸

Field Hospital No. 15 established a dressing station at Cocherel, but as only a few patients were received there, it moved on June 4 to Chateau la Rue on the La Ferte-sous-Jouarre—Chateau-Thierry road.¹⁹ Here it operated an auxiliary triage and then, on alternate days, took over that duty entirely from Field Hospital No. 1 with a view to relieving the overdriven personnel of that unit; but this arrangement, proving unsatisfactory, was discontinued.¹⁹ On



FIG. 51.—Evacuating wounded by truck from Field Hospital No. 15, near Montreuil, France, June 7, 1918

June 16 the unit moved to Luzancy, where it remained until July 6, operating a hospital for sick and gassed patients.¹⁰

Field Hospital No. 23 and, at first, Ambulance Company No. 23 utilized a large château in Meaux.¹⁰ Here a hospital was established which, with the addition of two Bessonneau tents, gave a capacity of 150 beds. This hospital received patients, especially the sick and slightly wounded, from the main sorting station at the front, Field Hospital No. 1, and evacuated them to the hospitals located at Juilly.¹⁰ It was, in fact, a relay station for all slight cases, and it rendered first aid to those en route to Juilly, the point farthest forward where definitive surgical treatment could then be given.¹⁰ As the distance from the various points at the front to Meaux was 40 to 50

kilometers (24.8 to 31 miles) and an additional 25 km. (15.5 miles) intervened to the nearest evacuation hospital, this second sorting or relay station proved very valuable for dressing, resting, warming, and feeding the disabled.¹⁰ This hospital was joined here on June 4 by Field Hospital No. 16 (animal-drawn), the two companies continuing to operate the hospital until they were sent to more forward stations on June 9 and 11, respectively.¹⁰

Cases received at this point were:¹⁰

	Gassed	Wounded	Shell concussion	Injured	Sick	Total
Field Hospital No. 23.....	41	797	20	22	88	968
Field Hospital No. 16.....	250	2,500	0	0	50	2,800
Total.....	291	3,297	20	22	138	3,768

On June 6, Field Hospital No. 23 sent half of its personnel to Bezu-le-Guery to assist Field Hospital No. 1. There they remained until June 10, when the personnel was reassembled and the unit moved to La Ferte-sous-Jouarre, where it operated a hospital for nontransportable wounded. This hospital was well equipped with surgical appliances, including an X-ray plant, and within a few days extra officers for surgical teams and 18 female nurses joined. From two to five surgical teams operated until the service here was taken over by the 26th Division on July 7.¹⁰ This hospital at La Ferte-sous-Jouarre admitted a total of 963 patients, classified as follows: Gassed, 4; wounded, 923; psychoneuroses, 9; injured, 30; sick, 17.¹⁰

Field Hospital No. 16 (animal-drawn) reached Meaux on June 4, operating there with Field Hospital No. 23 until June 11, then moving to Luzancy.¹⁰ Here a building, formerly used by the French for hospital purposes, was supplemented by tentage, and shelter was thus provided for 800 beds.¹⁰ Conjointly with Field Hospital No. 15, this unit operated a divisional hospital for gassed and sick. Admissions here were as follows:¹⁰

	Gassed	Wounded	Psycho-neuroses	Injured	Sick	Total
Field Hospital No. 15.....	858	22	45	52	800	1,777
Field Hospital No. 16.....	1,500	0	0	0	40	1,540
Total.....	2,358	22	45	52	840	3,317

Of the foregoing, some 500 were returned to duty.

MEDICAL SUPPLY UNIT

The divisional medical supply unit arrived at Meaux on June 1 and began immediately to issue matériel which was sent forward on returning ambulances.¹⁰ Its supplies were obtained in part from Meaux, where matériel brought from Soissons had been stored by the American Red Cross Mission after its retreat from the latter point. Other supplies came from the advance medical supply depot at Coulommiers, to which large quantities

of army supplies had been sent by truck trains from Cosnes and Is-sur-Tille.¹⁰ During the first part of the operations there was shortage of blankets, litters, and pajamas in divisional hospitals because of inadequate organization and facilities for distribution.¹⁰ After the establishment of a medical supply depot at Lieusaint, with excellent truck service distribution, less difficulty was experienced.¹⁰ On June 9 the divisional supply unit was moved to La Ferte-sous-Jouarre, and distribution to forward organizations was further facilitated.¹⁰

From June 15 until the division was relieved, no changes were made in the location of the sanitary units, and the same system of evacuation was maintained.¹⁰ Patients were removed by regimental and ambulance company litter bearers from battalion and regimental aid stations to ambulance posts, and thence to the triage at Bezu-le-Guery, where gassed cases were bathed and reclothed before being sent to Field Hospitals No. 15 and No. 16, at Luzancy, whither also the sick were sent. Nontransportable wounded were sent to Field Hospital No. 23 at La Ferte-sous-Jouarre, and after June 14 all others were sent to Mobile Hospital No. 1 and Evacuation Hospital No. 7 at Chateau Montanglaust, near Coulommiers.¹⁹

THE 3D DIVISION

On May 27 the Germans began their offensive between the Aisne and the Marne, and within the next few days elements of the 3d Division, which had been placed at the disposal of the French, began their move toward Chateau-Thierry. The 7th Machine Gun Battalion was the first organization of the division to enter the lines, reaching the defenses of the bridgehead at Chateau-Thierry late in the afternoon of May 31, there reinforcing a battalion of the 10th Moroccan Division at a very critical moment.²⁰ The main body of advancing German troops reached the Marne the next day, but were prevented from crossing at Chateau-Thierry.² The prompt arrival and stubborn defense of this important point by untried troops (May 31 to June 1), are well worthy of special mention. Continuing operations through the following days, the 7th Machine Gun Battalion was relieved by the 9th Machine Gun Battalion on June 4. The first battle casualties of the 3d Division occurred here.²¹ Meanwhile, the main body of the division had reached the Marne and was posted in Chateau-Thierry and eastward therefrom to Dormans. From June 1 to 5 it took an active part in the Aisne-Marne operation.²¹

On June 15, the 7th Infantry was detached and placed in the sector of the 4th Brigade (2d Division), where it relieved the 5th and 6th Marines (4th Brigade).²¹ Withdrawn on the night of June 23-24, it then rejoined its division.³ From June 4 to July 14, the remainder of the division held the south bank of the Marne.²¹

MEDICAL DEPARTMENT ACTIVITIES

When the 7th Machine Gun Battalion began its participation in the defense of the bridgehead at Chateau-Thierry, its battalion aid station was

located in a cellar 200 yards to its rear, the next day (June 1) moving to a less exposed position across the street. Some of the American wounded belonging to the 3d Division were cared for in French sanitary formations.²²

AMBULANCE COMPANIES

Ambulance Company No. 5 was located at Essises on June 3, with its main dressing station and ambulance park at that point. An advance dressing and ambulance station, with 1 medical officer, 1 noncommissioned officer, and 8 men, functioned at Courboin-les-Alloix.²³ This company dispatched ambulances from both these points to the following: The 4th Infantry at Petit Heurtebise Ferme, Nesles, and Les Evaux, the 7th Infantry at Le Rocq Ferme, and the 6th Engineers at Bocage. It also evacuated sick and wounded at Viffort. There was a daily schedule of 4 ambulances at Courboin, 2 ambulances at night and 1 during the day at Les Evaux, and 2 during the night at Le Rocq Ferme and of 1 both day and night at Petit Heurtebise Ferme and at Nesles.²³

Ambulance Company No. 7 had its main dressing station at Conde en Brie on June 3 and on June 4 at Pertibout.²⁴ Ambulance Company No. 26 was located at Verdelot,²⁵ Ambulance Company No. 27 was stationed at La Ferotterie, where it was occupied solely with transportation, employing all its available ambulances for evacuation service from Field Hospital No. 27 to Field Hospital No. 26 at Coulommiers and to the Army Red Cross hospital at Jouy-sur-Morin.²⁶

FIELD HOSPITALS

The divisional field hospitals reached the Marne on June 1 and began operations on June 3. Field Hospital No. 27 was designated as the triage and located at Verdelot, about 17 km. (10.5 miles) back of the lines. Field Hospital No. 5, used as the gas hospital, was located at Ville Chamblon, about 10 km. (6.2 miles) south of Chateau-Thierry. Field Hospital No. 26 was located at Coulommiers, 30 km. (18 miles) from the front, to operate for a few days as an evacuation hospital, while Field Hospital No. 7 was held in reserve near St. Barthelemy. So far as possible the personnel of these units was divided into two shifts, each working 12 hours. About the middle of June, 1 shock team, 4 surgical teams, and 9 nurses joined Field Hospital No. 27.²⁷ The mobile divisional laboratory operated in conjunction with the field hospitals.²⁸

SUPPLY UNIT

The medical supply unit established a depot June 2, with two truck loads of supplies, at Verdelot, but until July 14 there was no great demand for supplies other than medicines, dressings, etc. The American Red Cross established a divisional storeroom in the same building and worked in cooperation with the supply officer.²⁹

MEDICAL DEPARTMENT SERVICE IN REAR OF THE DIVISIONS

The Medical Department subsection of the Fourth section—i. e., the co-ordination of transportation section, of the general staff—supervised and in general terms directed the activities of the Medical Department in the field, while a medical representative of this subsection was locally in charge of the field activities of the Medical Department, and performed the duties incumbent upon a chief surgeon of the forces in question.

As noted in Chapter IX, this officer had been detailed to act as liaison officer for the Medical Department between the 1st Division and the French Army, and also as liaison officer for the Medical Department between that division and our General Headquarters. On May 21 he was also appointed by General Headquarters as liaison officer for the Medical Department between the 2d Division and the French Sixth Army, to which that division would be attached.³⁰ In this position he was to discharge duties altogether similar to those which he already had performed for the 1st Division, viz, to maintain contact between the divisional medical service and the French, and also between the division and our General Headquarters. On May 31, after the Cantigny offensive, this officer proceeded to the Chaumont-en-Vexin area, just south of Beauvais, where the 2d Division had been located, but learned there that it had suddenly moved to Meaux.³¹ Here he joined it the next day and learned that it might enter the line at any moment, behind such hastily constructed trenches as could be improvised.³¹ His arrival relieved the surgeon of the 2d Division as well as the 3d Division, of the necessity of providing for hospitalization and evacuation in rear of their respective commands. On the other hand, as these divisions had been thrown into the sector in question suddenly to meet an emergency, our General Headquarters had had no opportunity to provide hospitalization in their rear.³¹

The arrival of American divisions in the Marne area created a new problem for our Medical Department in their immediate rear, and also in providing base hospital facilities for their casualties. In their retreat, as mentioned elsewhere, the French had lost all their evacuation hospitals in that region, totaling some 40,000 or 45,000 beds,³² and were not in a position to care for their own wounded and to assume the additional burden of caring for casualties in American divisions, though they undertook to do so to the limit of their resources.³² This being the situation, the French, for the first time, permitted us to take charge of medical service to the rear; furthermore, having so decided, they assisted in every way in the establishment of American military hospitals behind our divisions, and in their evacuation by means of our own hospital trains to fixed American hospitals in their rear.³³ Putting this plan into actual operation, however, was encompassed by almost insuperable difficulties. The number of our evacuation hospitals was far below the authorized quota, and as the sector originally selected for occupation by American troops was that facing Lorraine, some 256 km. (160 miles) to the east of Meaux, our efforts to construct base hospitals had been concentrated largely in that area and in rear thereof. The Medical Department of the



FIG. 52.—American Red Cross Military Hospital No. 1, Paris



FIG. 53.—American Red Cross Military Hospital No. 5, Autenil, Paris, July, 1918

American Expeditionary Forces had been ordered not to establish military hospitals in Paris or its vicinity.³¹ Under such conditions the only recourse for the American medical service was to utilize the Red Cross institutions in Paris as base hospitals, with such expansion and additions as were possible.³⁴ In anticipation of the great need for American hospitals in Paris, plans already started were continued and intensified to increase the Paris hospitals to their maximum capacity. These efforts were successful to the extent of a capacity of 10,000 beds.³³

The entire period of our service in the Marne area was one of peculiar difficulties in the evacuation service from the divisions and in hospitalization to their immediate rear. Open warfare increased enormously the burden placed on the Medical Department, and only by the utmost endeavor to utilize every hospital available, as well as all transport, plus such assistance as the French could give in ambulance service, could the situation be met. The difficulties were greatly augmented by the fact that our methods, in rear of the divisions, had to be correlated with a system different from ours, operated by an ally speaking a different tongue and exercising tactical control. During the early phase of these battles in the Marne area our medical service was confronted by shortage of personnel, hospital equipment, and ambulances.³³ The rapid German advance had so demoralized the railways that it was impossible to operate hospital trains in the early part of this period. Consequently, evacuation by ambulance, and, in lieu of ambulances, by truck, between the evacuation hospitals and the hospitals in Paris—a distance of from 40 to 100 km. (24.8–62 miles)—was at first necessary. By concentrating all our available resources, and borrowing from the French, some 200 ambulances were provided for the evacuation service of the 2d Division; but, owing to the great length of the route to be traversed, this number was barely sufficient to meet the needs.³³

In view of our shortage in hospitals in rear of the 2d and 3d Divisions, our medical liaison officer immediately made arrangements with Médecin Inspecteur General Lasnet, chief surgeon of the French Sixth Army, to which these divisions were now attached, that American wounded be admitted to the French evacuation and other hospitals.³⁵ Also, he undertook to provide hospitalization of our own for our troops in the area. A hurried survey showed that the only American hospital available was a Red Cross unit which was operating at Juilly-Domartin under the supervision of the commanding officer of Red Cross Hospital No. 1 at Paris.³¹ The Juilly hospital had bed space for 280 wounded, though its personnel was inadequate to care for that number.³¹ Efforts were made to increase its bed capacity at once to 800. To assure delivery of needed material, the liaison officer hurriedly visited Red Cross headquarters in Paris, and within 48 hours the supplies needed began to arrive at Juilly.³¹ Eventually this hospital, which was designated to care for the seriously wounded, was taken over by the Army, becoming Army Red Cross Hospital No. 7.³⁶ Meanwhile, the liaison officer had wired to the chief of G-4, G. H. Q., that there was no adequate provision for our wounded, and urged that operating teams, a mobile surgical unit, hospital trains, ambulance

transportation, and miscellaneous personnel be placed at his disposal.³⁵ As Juilly was on the left flank of the Chateau-Thierry salient at a distance which would require a haul of 50 or 60 km. (31-37 miles) from the right flank of the American sector, it was decided that hospitalization should be provided also farther to the east.³⁵ This need became even more apparent when, on June 2, it was learned that the 3d Division was at Viels Maisons.³⁶ The liaison officer at once called up the Red Cross in Paris and asked that it establish a 600-bed hospital at Montmirail.³⁵ For this Red Cross supplies, being stored in Paris, were much more quickly available than were those of the army, which were stored at Cosne.³⁵ The Red Cross immediately undertook to supply the materials required and shipped them by truck on June 4, but the medical liaison officer was informed on that date that as Montmirail was outside the Sixth Army sector he would have to select another site for the hospital which these supplies were to equip. He then selected for it a château at Jouy-sur-Morin, about 20 km. (12.4 miles) south of Viels Maisons, and the Red Cross, at the latter point, directed its stream of trucks to the newly selected location. This château was in excellent condition and provided ample space for a surgical clinic, shock rooms, sterilizing rooms, kitchens, and rooms for personnel.³⁷ Fortunately, the number of casualties from the 3d Division had been relatively few and had easily been accommodated in French hospitals, most of them entering the evacuation hospital which the French were operating at Coulommiers.³⁸ On June 5, the hospital at Jouy-sur-Morin, American Red Cross Hospital No. 107, was ready to receive patients. Later it expanded to a capacity of 700 beds, and was operated by personnel from the army and from the Red Cross, its commissioned personnel coming from the former.³⁹

On June 4 and 5 arrangements were made for evacuations by ambulance from the hospital at Juilly. As the personnel at that time was becoming physically exhausted, and as the X-ray equipment for the hospital for non-transportables of the 2d Division, now established at Meaux, had not yet arrived, the surgical teams which reached the latter unit on June 4 were transferred to Juilly.³⁷ On the same date the officer in charge of the army medical supplies, which had now arrived, was directed to establish the advance depot for the Medical Department at Coulommiers. Information was received that two evacuation hospitals that had been asked for would join as soon as possible.³⁷

On June 5 three United States Army Ambulance Service sections, with 20 cars each, which the liaison officer had requested, reported, but they were placed in the service of the 2d Division and not under his immediate control.³⁸ On the same date, as it appeared that the hospital at Juilly would be overtaxed, the liaison officer called up the chief surgeon, district of Paris, and asked that he have all available space and operating teams ready to receive wounded the following morning and that he send all available ambulances to Juilly for their transport.³⁸ The chief surgeon of the French Army was asked that he make arrangements to have American wounded received in all French hospitals, and he renewed his assurance that this would be done. On the morning of June 6 all available ambulances and numerous trucks were evacuating from

the front of the 2d Division into Juilly, where additional operating tables had been installed.³⁸ Though the surgical teams there worked day and night, they were insufficient to care for all wounded received. As a matter of fact, not more than a fourth of the personnel needed by this hospital could be furnished it. Therefore incoming patients were carefully triaged here, and those able to stand the journey were sent on to Paris hospitals in several ambulance convoys.³⁸ The next day the first hospital train arrived at Juilly. On June 6 and 7, by ambulance and train, 1,183 patients, practically all of whom had come from the 2d Division, were sent from Juilly to Paris.⁴⁰ Of this total all but 199 were evacuated by ambulance.⁴⁰ On the dates mentioned the small hospital at Juilly had received about 1,700 patients, and for a period of four days its personnel worked 20 hours a day.⁴⁰ The litter bearers—most of whom were French soldiers unfit for front-line service—worked even longer hours.⁴⁰ Their labors were supplemented by ambulance drivers. Finally all were too weary to lift a litter to the level of the upper tier of an ambulance. A detachment from the 2d Division then relieved them until the personnel of Evacuation Hospital No. 8 arrived—on June 8.⁴⁰ This unit, then the only evacuation hospital in France, was assigned to assist the Red Cross hospital at Juilly until its own equipment arrived. For evacuation hospital service to the 3d Division, which was relatively inactive at this time, the divisional field hospital at Verdelot, caring for nontransportable wounded, was supplemented by a mobile surgical unit.⁴¹ The Red Cross hospital at Jouy-sur-Morin was on a good working basis and competent to take care of all the wounded of this division.⁴¹

On June 10 arrangements were made that the three Army Ambulance Service sections heretofore in the service of the 2d Division be placed at the disposal of the medical liaison officer.⁴² As soon as the order concerning this arrangement was received, one of these sections was ordered to remain with the 2d Division, one was sent to the 3d Division, and one was attached to Evacuation Hospital No. 7⁴³ (which arrived at Chateau Montanglaust June 12), with the understanding that it would be available for front-line work if required.

On June 11 information was received that the Quartermaster Corps contemplated the establishment of a large depot at Lieusaint and that the advance depot of the Medical Department at Coulommiers would soon be transferred there.⁴⁴

The 2d Division moved its field hospital for nontransportables from Meaux to La Ferte-sous-Jouarre, where it was operating to capacity by June 12, with greatly increased personnel.⁴³

Evacuation Hospital No. 7, which had reached Chateau Montanglaust on June 12, was joined the same day by Mobile Hospital No. 1, and thereafter, so long as they remained in this locality, they operated as a consolidated unit, under control of the commanding officer of Evacuation Hospital No. 7.⁴⁴ As soon as they could be installed—June 14 and June 13, respectively—these units were worked to capacity, receiving among others the evacuable patients from the hospital for nontransportables of the 2d Division at La

Ferte-sous-Jouarre. They admitted more than 2,700 patients from that hospital during the next six weeks.⁴⁵ By the use of tentage the number of operating tables for the consolidated formation in question was rapidly increased from 8 to 16 and later to 26, but because of the limited number of operating teams available the latter number was seldom utilized. On June 13 an X-ray team joined American Red Cross Hospital No. 107 at Jouy-sur-Morin.⁴⁶

The medical supply depot at Coulommiers, meanwhile, was very active, its two autotrucks being constantly engaged in delivering matériel, especially litters and splints.⁴⁴

On June 12, word having been received that other divisions had been ordered to this area, an inspection was made with a view to locating sites for the evacuation hospitals necessary to serve them should such hospitals become available.⁴⁴ Suitable sites, however, were few for the reason that only a few railroad sidings were long enough to accommodate our hospital trains, and even when tracks were long enough, they might not be available for Medical Department use because of other military needs. After some delay a tentative selection of sites was made, but final decision was reserved until the last moment. Alternative locations were also selected, to be occupied in case our lines fell back.⁴⁴

All Medical Department formations in rear of divisional formations as they became available were assembled in a semicircular disposition on either side of Chateau-Thierry. So far as possible, these hospitals occupied buildings, but frequently they employed tentage. On June 15 arrangements were made with the regulating officer at Le Bourget for the service of these hospitals by hospital train at Coulommiers.⁴⁷

The 4th Division had now arrived in this area without ambulances and was centered around Meaux, evacuating to Juilly.

Casualties in the 2d Division from June 2 to 15, inclusive, had been 2,385 wounded, 345 gassed, 244 sick, and about 600 killed. All casualties from this division were now being received by Evacuation Hospital No. 7 and Mobile Hospital No. 1 at Chateau Montanglaust.⁴⁷

By June 16 the liaison officer had requested six additional operating teams for Evacuation Hospital No. 7, as those of Mobile Hospital No. 1 with it were working day and night.⁴⁸ Pending their arrival, American Red Cross Hospital No. 107, being relatively quiet, assisted in caring for the wounded of the 2d Division. At this time it was decided to expand the latter hospital's bed capacity, and within 48 hours it was equipped to receive 500 and later 700 patients.⁴⁸ The hospital at Juilly (Red Cross Hospital No. 7) was still working to capacity, but it was proposed that as soon as the operating teams and equipment requested for Evacuation Hospital No. 7 arrived, it would care for most of the patients from the 2d Division. Bed space in the former hospital now totaled 700 beds, and it was planned to increase it to 1,000.⁴⁹

Though former experiences indicated that marking hospital sites by the Red Cross invited attack by enemy airplanes, evacuation hospitals and Red

Cross units acting as such were now ordered thus to designate their premises by red crosses, 104 feet in diameter, on a white base.⁴⁸

The first hospital train evacuation from Evacuation Hospital No. 7 was made on June 17.⁵⁰ On June 18 the medical supply depot moved to Lieusaint, where supplies to replenish its stock were expected. Such supplies as it still had at Coulommiers were left with Evacuation Hospital No. 7 for issue to the divisions, and the division surgeons were so notified. From June 4 to June 20 the hospital at Juilly received 3,274 patients, of whom it evacuated 2,863. The great majority of these were sent to Red Cross Hospitals No. 1 and No. 2, at Paris. Except in extremely active periods all these patients were given the necessary surgical treatment before being transferred.⁵¹ Meanwhile the capacity of Evacuation Hospital No. 7 had been increased to 850 beds, but its operating equipment had not yet been received. Mobile Hospital No. 1, attached to the latter, had been conducting four operating tables night and day in order to compensate for this deficiency.⁴⁹ This delayed equipment was received on June 20.⁵² On June 23 the army surgeon, French Sixth Army, made available to American Red Cross Hospital No. 107 radiological equipment until its own, which had broken down, could be repaired.⁵³

As the 28th Division had now arrived at Gonesse, in the area of the Marne, some distance back of the lines, instructions were given its division surgeon concerning evacuation of his sick and the obtainment of supplies. To each division newly arrived in this area a divisional gas unit was sent without requisition.⁵¹

By June 24 American Red Cross Hospital No. 107, at Jouy-sur-Morin, was sending patients to Coulommiers by convoy, whence they were either sent out at once by hospital train, of whose arrival the unit was notified, or they were admitted to the hospital there to await the arrival of a train.⁵⁴ Arrangements were made at this time with the French for the ambulance service of the 28th Division which, like the 4th Division, had reached the Marne area quite without these vehicles, and provision was made for the service of the division (should it enter a relatively distant section) by Mobile Hospital No. 1, which it was now possible to detach from Evacuation Hospital No. 7 for this purpose. On the 26th of June information was received that the sanitary trains of both the 4th and 28th Divisions were en route.⁵⁵ At this time the United States had only 16 hospital trains in France, and it had become evident that if gassed cases were to be evacuated prone, as ordered, additional transportation, both trains and ambulances, would be required.⁵⁴

When, on June 26, the 2d Division again attacked, the number of casualties became so great that the slightly wounded had to be transferred by ambulances and trucks from Evacuation Hospital No. 7 and Mobile Hospital No. 1 to Red Cross Hospital No. 107, at Jouy-sur-Morin.⁵⁶ The latter unit had sent out several trainloads of patients by this time, while in the interval from June 17 to 26, inclusive, Evacuation Hospital No. 7 had evacuated 2,271 patients, including some sent for evacuation from Red Cross Hospital No. 107 when that unit did not have enough evacuable in its own wards to warrant

call for a train for its service alone. The medical liaison officer estimated at this time that one operating table should operate 25 cases in 24 hours.⁵⁷ This was a general working average based on experience, but mutable according to the missile, the nature of the wounds operated, and the speed of the team concerned. In point of fact, it was greatly exceeded by some teams. It was found that wounds caused by shell usually required longer attention than those made by bullets.⁵⁷ In the successful drive which the marines concluded June 26 in Belleau Wood 199 of the seriously wounded were operated within 22 hours in the evacuation hospitals, the others being cared for in the hospital of the 2d Division for nontransportables.⁵⁸

The 26th Division came in during the night of June 29 and reported some ambulances lacking, but its transportation was much better than had been those of the 4th and the 28th Divisions when they entered the area.⁵⁹ Arrangements were made at this time to have the laundry from evacuation and other hospitals sent by truck to Paris. Shortage of fresh linen had become a serious problem.⁵⁸ With the assistance of the surgeon of the French Sixth Army, efforts were continued to hold the château at Meaux for the future use of the Medical Department.⁵⁶

By July 1, Evacuation Hospital No. 8, at Juilly, was receiving but few patients. Enemy wounded, received in some numbers on the following day, were treated habitually with the American wounded, unless there was a rush of patients, in which case they were sent to the French evacuation hospital at Coulommiers.⁵⁹

On July 2, the liaison officer for the Medical Department reported as chief surgeon for the Paris group, as the divisions operating in the Marne area were now designated.⁶⁰

When the 26th Division was ordered to relieve the 2d Division in the line on July 3, United States Army Ambulance Section No. 502 and four additional ambulances, together with a gas outfit, surplus blankets, and litters, were turned over to the 26th by the 2d Division.⁶⁰ All divisions were handicapped at this time by lack of transportation. Available trucks were just sufficient to transport the field hospital equipment as authorized before the war, but were insufficient for the portage in addition of the large numbers of extra blankets, litters and splints, and for the gas treatment equipment now carried. Arrangements were made with the French whereby they would supply transport for the 4th and 28th Divisions if they became engaged before their ambulances arrived.⁶¹

The medical supply depot, which had moved to Lieusaint, was ordered to assemble equipment for a 500-bed hospital, and on July 8 arrangements were made for parking a truck train there for the purpose of moving this unit and, if necessary, Mobile Hospital No. 1.⁶² Chief of a number of anxieties was that caused by shortage of ambulances. Despite frequent requisitions, the number furnished had been very limited because of limited supply, but on this date (July 8) a newly arrived evacuation ambulance company reported to Evacuation Hospital No. 7 to assist a similar unit already on duty there.

The latter had been loaned twice to the 2d Division and served both Evacuation Hospital No. 7 and the hospital at Jouy-sur-Morin. Until this time the shortage of ambulances had been very acute.⁶²

The Red Cross hospital at Juilly was now placed at the disposal of the army, and orders were received concerning the establishment there of Evacuation Hospital No. 8 as soon as its equipment was received. Of the total beds, 225 were ordered reserved for the French.⁶²

On July 11, consideration was given to the establishment of a hospital at Villiers-sur-Marne and the use of hospital barges, a few of which were idle at Meaux.⁶³ In view of the expected German offensive, all hospitals were cleared as rapidly as possible, supplies replenished, and similar preparations made. Quest was continued for sites for additional hospitals, but definite selection was difficult because of lack of motor transport and of railroad facilities, and also because of the possibility of an advance by the enemy in the attack known to be impending. An exhaustive estimate of the situation led to the tentative selection of Jouy-sur-Morin and Meaux as the sites best suited for the establishment of additional evacuation hospitals.⁶⁴

CRITICISM

The story of the Aisne defensive and the succeeding operations might now be considered to have been completed save for the fact that the Medical Department was severely criticized and, in justice to all concerned, account must be taken of the criticisms and the investigation which followed.

A certain newspaper correspondent prepared a cablegram to his paper in which he bitterly scored the handling of the wounded of the 2d Division in the early days of June, 1918, stating, in substance, that "the Medical Department of the Army failed to meet its responsibilities."⁶⁵ The cablegram was held up by the censor and immediately, when its contents were brought to the attention of the chief surgeon, A. E. F., he asked for an investigation by the inspector general's department. This was made between July 1 and 7.

The senior representative of the Medical Department, with G-4, G. H. Q., made the following official statement to the inspector general:⁶⁵

* * * * *

In order to understand what the responsibilities of the Medical Department were at this time it is necessary to know the agreement made by the American G. H. Q. and the French G. H. Q. when the American troops were turned over to the French to serve in the French armies. Under the terms of the original agreement the Medical Department was obliged to furnish the personnel and equipment of the sanitary units belonging to the division. All matters of supply, hospitalization, and evacuation were to be taken care of by the French. It became immediately apparent that the question of medical supplies for our divisions serving with the French could not be handled in a satisfactory manner by the latter. For this reason the agreement was modified to the extent that medical supplies and gas defense matériel would be furnished by the Medical Department, A. E. F., but the hospitalization and evacuation still remained for the French to accomplish.

When the 2d Division was withdrawn from the line and sent to the west of Paris it was originally understood that it would ultimately take position in the sector occupied by the 1st Division. Acting on this belief, a medical officer attached to G-4, G. H. Q.,

visited the 2d Division, then in the vicinity of Chaumont-en-Vexin, to make sure that the arrangements for hospitalization and evacuation were satisfactory. On the last day of May information was received which indicated that the destination of the division might be changed. Therefore, the same officer was sent to visit the division to see if other arrangements were necessary for hospitalization and evacuation. This officer was Lieut. Col. A. D. Tuttle, Medical Corps, and his last visit covered the days of June 1 and June 2.

On Sunday, June 2, word reached the A. C. of S., G-4, that the 2d Division's orders had been changed and that it was moving from the area it had occupied northwest of Paris to the vicinity of Meaux, northeast of Paris, and that it might be expected to come in contact with the enemy at almost any time. It was also learned that the movement had been made in great haste, and that the sanitary train of the division had been very widely separated, and that it had been impossible to entirely reassemble it as late as the 2d of June.

On the 2d of June Colonel Tuttle visited the headquarters of the 6th French Army, with which army the 2d Division was incorporated, and was informed that due to the military situation it would be impossible for the French to do much in the way of discharging their obligation to hospitalize and evacuate the battle casualties from the American division, and, moreover, it was requested that the A. E. F. medical authorities do what they could in this respect.

Owing to the shortage of Medical Department personnel in France the situation presented many difficulties. Nevertheless, the following steps were immediately taken: (1) Operating teams were ordered by telegraph to report at once to the Red Cross hospital at Juilly, near Meaux, and two operating teams were ordered at the same time to report to the division surgeon at Meaux; (2) 10 large Bessonneau ward tents belonging to the Red Cross, which were in storage at Camp de Mailly, were ordered by the A. C. of S., G-4, to be sent overland by truck transportation to the vicinity of Meaux. This order was telegraphed personally by the A. C. of S., G-4, at 11 o'clock at night (June 2d) to the commanding officer at Mailly; (3) on the morning of June 3d 10 truck loads of emergency medical supplies were ordered by telephone to be sent from the Medical Supply Depot at Cosne to Meaux; (4) a mobile surgical hospital in storage in Paris was ordered sent to the division surgeon at Meaux by automobile truck on the morning of the 3d of June; and (5) the A. C. of S., G-4, ordered a truck train to Is-sur-Tille to be loaded there with various reserve supplies, this also on the morning of the 3d of June. Included in these supplies were all the necessary drugs and appliances for the caring of gas patients, as well as 1,000 extra uniforms for both the 2d and 3d Divisions, the latter to be used for changing clothing of gas patients.

Col. Paul C. Hutton, Medical Corps, attached to G-4 was ordered in the latter part of May to report to the chief surgeon of the French Army with which it served. He was instructed to make all possible arrangements for the procurement of hospital facilities to meet the needs of this division.

On the afternoon of June 3d, an order was issued directing Lieut. Col. R. U. Patterson, Medical Corps, to report to the division commander, this for the purpose of placing the services of this most experienced officer at the disposition of the division surgeon. The chief surgeon, A. E. F., at Tours was notified by telephone of the disposition taken, and he was acquainted with the situation which existed regarding this division. I left G. H. Q. at 5 o'clock in the afternoon of June 3d and met the chief surgeon (General Ireland) in Paris on the morning of June 4th. Together we proceeded to Meaux and examined, with the chief surgeon, the disposition he had made to meet the situation. He went on to the division headquarters and had a personal interview with the chief of staff, the division commander being absent, who expressed himself as thoroughly well satisfied. On our return from division headquarters, we called on Medecin Inspecteur Lasnet, chief surgeon of the French Sixth Army. We then proceeded to the Red Cross hospital at Juilly, where the wounded were beginning to arrive. We found that there was a shortage of personnel although part of the personnel which was ordered on June 2d had arrived, and this personnel had been augmented by certain officers detached from the division sanitary personnel. It

was, however, perfectly apparent that steps should be taken to evacuate this hospital in the immediate future. The Juilly hospital, it might be well to state, had at that time facilities for only 225 patients, but a request had been made to the Red Cross to furnish the matériel to expand it to its maximum capacity, approximately 700 beds, and this was going on. Immediately upon his return to Paris (June 4), the chief surgeon requested of G. H. Q. that Evacuation Hospital No. 8, the only one available in France, and then en route from Brest where it had landed, be sent immediately to Juilly to furnish the necessary personnel. Upon our return to Paris, efforts were at once made to secure permission from the French authorities to send a hospital train to Juilly for the purpose of evacuating that hospital. This operation was attended with some delay, but a hospital train was sent on there the following day and relieved the congestion. However, it developed that owing to the limited amount of personnel at Juilly it would be impossible for the wounded to be evacuated by hospital train, inasmuch as this method of removing patients necessitated the handling of patients twice, placing them in the ambulance and carrying them to the station, and there handling the litters to place them in the trains. For this reason it was decided to make this secondary evacuation from Juilly to Paris by means of ambulances.

Colonel Bingham, Medical Corps, the medical officer of the hospital center of Paris, was informed of the general situation and instructed to organize the ambulance service to meet this need, Col. Percy L. Jones, Medical Corps, chief of the United States Army Ambulance Service, with headquarters in Paris, had been communicated with, and every available ambulance in Paris was placed by him at the disposition of the A. E. F. in this emergency. For the next four days the Ambulance Service, between Juilly and Paris, was very heavy and a considerable part of the personnel worked continuously night and day to keep the Juilly hospital evacuated. As has been shown by the statements of officers connected with this operation, there was at no time any lack of ambulance transportation, and neither was there any undue congestion of patients either at Juilly or at the Paris hospitals.

As stated above, the greatest difficulty experienced was in the shortage of personnel at the Juilly hospital. This was partially relieved by the early arrival of 45 army nurses. The evacuation hospital which was anticipated would arrive by June 5, did not reach Juilly until June 8. This delay was due, first, to the fact that the request for railroad transportation could not be filled by the French. On June 5, an urgent plea was made by A. C. of S., G-4, to the chief of the French mission to expedite this movement. On the morning of June 6, the necessary cars were made available at Bazailles-sur-Meuse, but owing to the congested condition of the railroads the unit did not reach Juilly until 45 hours later, or the morning of June 8. The arrival of this unit made it possible to relieve the overworked personnel of this hospital. It was also made possible to detach from this unit certain of the enlisted personnel to assist the overworked personnel of the hospitals of Paris.

The 3d Division, which was in the line close to the 2d Division and only a little to the east of Chateau-Thierry, also required hospital facilities. The needs of this division were met by the installation of a hospital at Jouy-sur-Morin. This hospital was opened in some buildings which had formerly been used as a French hospital and was placed at the disposal of our army by the chief surgeon of the 8th French Army. The Red Cross furnished the matériel and part of the personnel, the balance being made up of casual Medical Department personnel of the A. E. F. By the addition of tent wards the capacity of this hospital was greatly augmented until it reached 600 beds. It was very well located for the 3d Division and received a few cases from the 2d Division. As it was about 20 km. from Coulommiers, the evacuation through the evacuation hospital established there presented no difficulties.

I remained on duty supervising the general problem of evacuation and hospitalization of the wounded for this division until the 12th of June, when the flow of wounded had become very small. During the 10 days I visited every sanitary formation, and every request for matériel and personnel was forwarded to the chief surgeon's office. Every

such request received immediate attention with the exception that there was a limit on the available personnel which could be furnished. Surgical operating teams, which had been organized in anticipation of just such emergencies, were ready and available, and it only required a telephonic request to have them started for any given destination. The establishment of an advanced supply depot by shipping the matériel referred to above from Cosne prevented any shortage of the absolutely essential supplies.

Mr. ——— refers to the Paris hospitals as in no sense emergency institutions and not prepared to meet such a situation as was presented. In this connection it seems desirable to state that this situation as it developed had been foreseen, and that on the 8th of April, about two months before the emergency arose, the commanding officer of the A. R. C. Military Hospital No. 1, with his second in command, the commanding officer of American Red Cross Military Hospital No. 2, and Major Lambert, M. R. C., attached to the Red Cross, were requested to meet the writer in Paris. On that date I informed these officers that it was my belief that at any time the hospitals of Paris might be called upon to act as evacuation hospitals, and that they could expect to receive their wounded from the front directly. Moreover, it was stated that with this contingency in view both of these hospitals should be augmented to the maximum limit consistent with safety and so organized that a large part of the patients could be rapidly handled and cared for. At the same time a request was made of the Red Cross through Major Lambert that a tent hospital of 500 beds with a view to expansion to 1,000 beds to make ready on the Auteuil race track. It might also be stated that the Red Cross began the erection of such hospitals as soon as permission from the proper authorities could be obtained, and that a hospital was ready to operate and very materially assist in meeting the emergency which existed between June 4 and July 12. At the same time the question of automobile transportation was discussed and every possible contingency foreseen and provided for.

Criticism has been made that the selection of Meaux as a clearing point for the wounded of the 2d Division was a mistake, for the reason that it was too far from the front. I do not know who selected Meaux, but at the time it was chosen it was undoubtedly the best possible choice, for the reason that the enemy was approaching Meaux very rapidly, and to have placed the clearing point for the wounded nearer, until it was evident that the enemy could be held, would have been a most serious mistake. After the flow of wounded had become established, and because of the large number involved, it was impossible to immediately arrive at any other solution of the problem. However, as soon as this time arrived, which was about June 10, the establishment at Meaux was moved forward to La-Ferte-sous-Jouarre, where possession was taken of a small civil hospital. One of the division field hospital units was installed here and provided with first-class surgeons, electric lights, X-ray apparatus, etc. The nearest point where hospital trains could reach for the purpose of evacuation was at Coulommiers. This place had been visited several days prior by General Ireland and myself with a view to the possibility of moving hospital trains in and out. It was found that the French had no objection, as they were using it as an evacuating point for their own wounded. The question of sending our wounded to the French evacuation hospital at Coulommiers was also discussed with the French authorities. We were informed that this number (the total French resources in Coulommiers comprised about 1,300 beds) was not adequate to meet the probable needs of the French; and while it was stated that any American sent there would be given the best possible care, it was believed highly desirable that the A. E. F. establish its own hospital. A survey of this locality showed that the château of Montanglaust, about 2 km. north of the city, was the most desirable site. Possession was taken of this château and the surrounding ground. The Evacuation Hospital No. 7 was ordered to proceed there at once. At the same time Mobile Hospital No. 1, then in Paris, was directed to proceed to Coulommiers. However, as it had no transportation, it was necessary to provide approximately 30 trucks for this purpose. The A. C. of S., G-4, G. H. Q., was communicated with, and I was instructed to request the commanding general in Paris to furnish any truck transportation which might be available. It was found that there were ample trucks at the aviation camp a few kilometers south of Paris, but there were no

drivers. After considerable delay French drivers were borrowed, and the unit was finally started on its way. On the 12th of June both the mobile hospital and the evacuation hospital had reached Coulommiers, and on the 13th they were receiving patients. Within the three weeks this formation handled over 4,000 cases, the great majority of which were evacuated by hospital train from Coulommiers. The establishment of this hospital immediately relieved the overtaxed Paris hospitals and the hospital at Juilly and at the same time reduced by nearly one-half the automobile transportation of the wounded.

As has been indicated above, the Medical Department found itself faced with a difficult situation when on the 2d of June it was learned that the 2d Division had been shifted from the west of Paris to the northeast. At that time it was already coming in contact with the enemy and casualties were beginning to grow. Contrary to expectation, the French were able to do little or nothing toward evacuating and hospitalizing our wounded.

While it had been mutually agreed that, when an A. E. F. division was serving with the French, the latter would evacuate and hospitalize our sick and wounded, experience had shown that, for reasons which it is not necessary to detail here, the gaining control of our wounded at the earliest possible moment was so highly desirable that it must be considered as a necessity. Consequently, no effort has been spared to get our wounded into the A. E. F. hospitals at the first opportunity.

On June 2d the available hospital facilities which could be counted on consisted of: Juilly hospital, of 225 beds; A. R. C. M. H. No. 1, in Paris, of 1,000 beds; A. R. C. M. H. No. 2, in Paris, of 400 beds; A. R. C. M. H. No. 3, in Paris, of 75 beds; A. R. C. M. H. No. 5, in Paris, of 500 beds.

It was necessary to provide for increasing the capacity of Juilly and the rapid evacuation of the Juilly hospital to Paris hospitals. In addition it was necessary to provide for rapid evacuation of the Paris hospitals by hospital trains into the interior of France, where the base hospitals exist. This latter movement was under the direction of Colonel Bingham, Medical Corps, and never at any time created the slightest difficulty. Hospital trains were moved with smoothness and dispatch. The increase of the capacity of the Juilly hospital was accomplished by the Red Cross. This organization, having its own transportation and ample material, was able to deliver the necessary supplies at Juilly in the course of a few hours. Due to the difficulty of transportation, the Medical Department was not prepared to obtain this result in the same length of time.

The question of evacuation of Juilly was most difficult. As stated above, insufficient personnel prevented the use of hospital trains at first, and it became necessary to rely on ambulance transportation. Fortunately, ambulances in sufficient number were available, due to the fact that all of the available resources of the U. S. A. A. S. were placed at our disposition by the chief of that service, Col. Percy L. Jones, Medical Corps. In this connection it might be well to state that in addition to the measures taken on June 2, and noted above, three complete sections of the United States Army Ambulance Service were requested of the chief of the service, and were immediately dispatched by him to report to the division surgeon at Meaux. These three sections provided 60 additional ambulances for the use of the division surgeon. The work performed by these sections was of the highest order, and without them the transportation of the wounded from the front to the clearing point could not have been accomplished.

As statements have been obtained from a number of the officers who were directly concerned with the evacuation and hospitalization of our wounded, no detailed comment on this phase of Mr. * * * criticism is necessary. An attempt has been made merely to outline the measures which were taken to meet an existing emergency. If there was a failure to provide proper care for our wounded, then the responsibility rests entirely with the officers of the Regular Corps (Medical), as it so happened that all the planning to meet this emergency and the greater part of the execution of measures adopted rested with officers of the regular Medical Corps.

The value of an investigation such as the one in hand would appear to consist in the detection of mistakes made, and to learn how to correct them in the future. Whether better results could have been obtained in the present instance with the available resources

is not for me to decide, but whether a similar emergency can be better met in the future is pertinent, particularly as such an emergency is apt to develop at any moment. The French have recently lost many of their best hospitals, totaling many thousands of beds. What is of greater importance, however, that they have lost large quantities of matériel, which could be replaced only with great difficulty. Due to this loss they are seriously hampered in meeting the needs of their own service, and have been compelled to change their whole system of evacuation and hospitalization. It seems probable, therefore, that the A. E. F. will be forced to assume this responsibility for its own casualties. As to whether the A. E. F. is in a position to satisfactorily discharge this obligation, the answer must be in the negative.

In explanation of this statement the following points may be developed:

(1) *Hospitalization*.—The number of hospitals in France is insufficient at the present time to care for the sick alone at the sick rate of last winter. The rapid arrival of troops is steadily reducing the ratio of hospital beds to the total strength of the A. E. F. In case each of the divisions now in the line should sustain one-half of the casualties which have recently occurred in the 2d Division, it would require every A. E. F. hospital in France to take care of these cases, and there would be nothing left for the sick.

(2) *Personnel*.—The sanitary personnel, as has been developed above, is insufficient. The ratio of sanitary personnel to combat troops was fixed nearly a year ago. The figure adopted at that time was lower than that believed to be necessary. In addition, the shipment of sanitary personnel has never kept pace with the arrival of combat troops, with the results that at present there is a shortage of many thousands in the different ranks and grades. In endeavoring to meet the needs of the present situation it is necessary to shift the personnel from point to point, and in so doing to break up trained sanitary units. This personnel shortage is urgent, has become chronic, and is now becoming acute.

(3) *Material*.—The situation regarding material is fairly satisfactory, with the exception of automobile ambulances. The situation in this regard has become more acute, owing to the recent arrival of several divisions with no equipment for the sanitary trains. However, the allowance of ambulances is inadequate. This was illustrated in the matter under consideration. The division has a complete equipment of 41 motor ambulances. In order to move the wounded it was necessary to reinforce this number by 60 additional vehicles in order to keep the battle front clear of wounded. Even with this very large increase it was necessary to supplement the ambulance transport by using motor trucks for the movement of the more slightly wounded patients.

The secondary evacuations from the field hospitals have to be accomplished by 1 ambulance company of 12 ambulances. Actually 100 motor ambulances were required during the height of the fighting near Chateau-Thierry. There was therefore a total of 120 ambulances serving this one division. Even with this large number many drivers worked for 48 hours and some even longer without rest or sleep.

At the present time it has been necessary to rely to a considerable extent upon our ability to borrow from the French sections of the U. S. A. A. S. organized for duty with the French Army. Within 48 hours the chief of the United States Army Ambulance Service has received a telegraphic request from G. H. Q., A. E. F., to furnish more sections, and at the same time the French commander in chief, through the French mission, has asked for additional sections of this ambulance service. By using all of his replacement matériel and personnel the chief of this service will be able to furnish three sections to meet both demands, while no less than 40 are needed by the A. E. F. alone.

(4) *Transportation*.—In a situation such as the one under investigation, transportation from the Medical Department point of view becomes the crux of the matter. If ample truck transportation had been available and under the control of the Medical Department, the shortages of matériel and personnel would have been no serious obstacle. While on the whole there was excellent cooperation and a manifest desire on the part of all concerned to facilitate the care of the wounded, the fact remains that there was insufficient transportation and none at the disposition of the Medical Department.

The difficulties and delay in securing the movement of Mobile Hospital No. 1 from Paris to Coulommiers was mentioned above. As further illuminating this point, the difficulty in moving the Evacuation Hospital No. 7 to Coulommiers may be cited. This unit, with part of its equipment, was shipped direct from the medical supply depot at Cosne. This shipment was 10 days in reaching Coulommiers. It was urgent that this hospital should be put into operation, but as all the beds and bedding were included in the Cosne shipment nothing could be done until this shortage was made good. This was accomplished by requesting the Red Cross to furnish the supplies. Trucks were promptly sent from Paris and the necessary material was delivered at Coulommiers within a few hours. It is believed that the Medical Department, if it is to meet satisfactorily emergencies of this kind, must be in a position to accomplish the same results.

(5) *Organization.*—This has been discussed in a memorandum to the commander in chief submitted some months ago. It has not been considered necessary to take up this question here further than to observe that it is not believed that the Medical Department will ever be able to function satisfactorily, or to meet emergencies of this nature, so long as it is considered simply as a supply department. Under the existing organization of the A. E. F. the Medical Department functions under the same rules and regulations as a purely supply department, while as a matter of fact supply is only a comparatively minor part of its duties.

(6) *Red Cross.*—The criticism of Mr. ——— makes numerous references to the Red Cross, and it is clear that Mr. ——— was under the impression that the evacuation of the wounded and their hospitalization was entirely handled by the Red Cross. Due to the designation of the Paris hospitals as Red Cross hospitals, and the use of the Red Cross insignia on Medical Department material, the line of demarcation between the two is naturally confused in the public mind.

The Medical Department has the highest appreciation of the value of the Red Cross and the service which it can render. There is a most commendable spirit of cooperation on the part of the Red Cross officials, as is shown by Major Perkin's statement. The Red Cross is considered a part of the Medical Department. There is no spirit of rivalry or competition, and all the Red Cross operations of a military nature are initiated and controlled by the chief surgeon, A. E. F. There are many things which the Red Cross, through having ample funds, material, and transportation, can accomplish more rapidly and efficiently than is possible for the Medical Department. It is hoped that the Red Cross resources will continue to be utilized to the maximum to the advantage of the sick and wounded.

It is believed that the sphere of activity of the Red Cross should be limited to the zone of the rear. This belief is founded on the basic principle of military organizations, that only military personnel should be permitted in the zone of active operations. Because of the existing conditions in France, it has been necessary to make exceptions to this generally accepted rule, and Red Cross hospitals have been established well toward the front.

As illustrating the necessity of making such exceptions, the requirements of the 1st Division, A. E. F., may be cited. When this division went into the line near Beauvais the sick and wounded, in conformity with our agreement with the French, were to be sent to French hospitals in the rear of the division. It soon became apparent that the arrangement was unsatisfactory due largely to the difference in language and the difficulty of communication between hospital personnel and American patients. A request that the establishment of an evacuation hospital be authorized from which American patients could be evacuated by A. E. F. hospital trains was disapproved by the French. Permission was, however, secured to establish a Red Cross hospital at Beauvais. This hospital has been placed in operation. It is manned entirely by A. E. F. personnel, but a French *médecin-chef* is nominally in control, inasmuch as the evacuation must take place by French hospital trains. Due to the congested condition of the railways, it was stated by the French that an attempt to move A. E. F. hospital trains in this area would seriously interfere with the movement of supply trains.

The result has been eminently satisfactory. Our patients are received in this militarized Red Cross hospital, cared for by A. E. F. personnel, and evacuated by French hospital trains. An agreement was made with the French Fourth Bureau, whereby it was made possible to stop French hospital trains outside of Paris, remove any American patients, and place them in Paris hospitals. This getting our wounded under our own control and in the care of A. E. F. personnel could have been accomplished in no other way than through the agency of the Red Cross.

NOTE.—In addition, 3 sections of the U. S. A. A. S. of 20 ambulances each, were ordered to report to the division surgeon at Meaux to augment the divisional ambulance transport. One evacuation ambulance company, which had just arrived at St. Nazaire, was ordered to proceed overland to Paris, there to be held in reserve.

(Signed) : S. H. WADHAMS,
Colonel, Medical Corps.

The conclusions of the inspector general were as follows:⁶⁶

5. *Conclusions.*—First. That in no particular does this investigation, based either upon the sworn testimony of witnesses or the facts elicited by the inspector general and those associated with him, substantiate the statements made by Mr. ——— in his cablegram. Mr. ——— himself acknowledged this both in his testimony and in his letter attached hereto (incl. 2). It is only fair to say that Mr. ——— made a very frank acknowledgment of this, that he, being ignorant of the facts, had been misled by persons who were equally ignorant of conditions under which the evacuation of the wounded took place.

Second. That no incompetence was shown on the part of the Regular Army Medical officers, but on the contrary their work, as well as that of the Medical Reserve Corps officers and the Red Cross, is worthy of commendation. The situation was a very difficult one and I believe was well handled.

Third. That the conditions were aggravated by the inability of the French to provide the necessary hospitalization agreed to owing to a tremendous loss in beds of their own, the absence of available hospitals nearer than Juilly and Paris, congestion of the railroad lines, etc.

Fourth. I concur with Lieut. Col. Fred T. Murphy, M. C., N. A., that the care received by the wounded during the period in question was as good or better than that received by the soldiers of the other allied armies under similar battle conditions.

Fifth. That it can not be deduced from the evidence or from a study of the situation that reserve officers, had they been in complete charge of the preparations, would have improved the situation, and that if they had been in entire charge the results would not have been so satisfactory on account of their lack of experience as to military administration.

Sixth. I also concur in the opinion of Colonel Murphy that the statement of the Red Cross commissioner for Europe, Maj. J. H. Perkins, that a United States Army Red Cross militarized hospital represented a cooperative effort between the Medical Department and the American Red Cross to provide for the care of the sick and wounded, begun always at the suggestion of the Medical Department and administered by them and modified by mutual agreement to meet the special demands of local needs would seem to answer as satisfactorily as possible the question raised in third section of paragraph 4, in first indorsement (on Mr. ———'s cablegram) of the chief surgeon.

Seventh. That the Red Cross rendered valuable aid in this emergency. In doing so they fulfilled in a very satisfactory degree their duties in the premises.

Eighth. That the relations existing between the regular and reserve members of the Medical Corps are harmonious and satisfactory.

Ninth. That differences of opinion as to the number of surgical teams and the amount of personnel necessary to take care of the wounded developed, but it was a matter of opinion, and did not, as it turned out, cause any loss of life or suffering.

Tenth. That the Paris hospitals were not emergency institutions, and that their facilities had been increased to meet just such emergencies.

Eleventh. That the French have recently lost many of their base hospitals, totaling many thousands of beds, and they have lost large quantities of material; that they are seriously hampered in meeting the needs of their own service, and that the A. E. F. is forced to assume the responsibilities of the entire hospitalization for its wounded; that at present it is not in a position to carry this out satisfactorily; that the number of hospitals in France is insufficient at the present time to care for the sick alone at the sick rate of last winter; that with the growing strength and increase of our sectors in the line and the casualties which may be expected after big operations the hospitals in France could not take care of all sick and wounded; that the sanitary personnel is insufficient; that this personnel has not been increased in proportion to the increase of combatant personnel; and that if this shortage is not made up it will be impossible to take care of the wounded as our people expect them to be cared for; and that grave situations will arise.

6. *Recommendations.*—(1) That the Medical Department be more fully represented on the general staff, to the end that it be more fully advised on the military situation in order to more intelligently meet its obligations.

(2) That further provisions be made for emergency reserve surgical teams to be held at such points where they will be available for use in active sectors; at present Paris is believed to be the proper point.

(3) That provisions be made for emergency transportation of personnel and material to move reserve medical personnel and material to the required points.

(4) That steps be taken to secure an increase of the sanitary personnel, both commissioned and enlisted, and establish more hospitals. These needs are believed to be urgent.

(Signed) A. W. BREWSTER,
Major Gen'l, I. G., A. E. F.

The correspondent in question withdrew his charges, in testifying before the inspector general, as follows:⁶⁷

I assure you this is an unique experience in my career. I have never, as Colonel Murphy knows—I have done a great deal of frank writing, but never have I seemed to have gotten so far from the facts as I have in this case. It has been a most enlightening morning and shows me how impossible it is to depend always on people who otherwise are entirely trustworthy, and with that information it is evident that they were quite as ignorant of the actual situation as I was; and it has also convinced me that never again shall I undertake to transport any facts or transmit any facts without going to headquarters to be sure that I am dead right; it also shows me the value of censorship. And I should like to add to that on record that I am very much pleased that—I am very thankful that cable of mine did not go to the editors of the ———, because there is nothing that I should more deeply regret than to transmit any facts or statements that could not be borne out entirely and fully by investigation, and I certainly was as convinced of these things as I ever have been in my life. I have never received such a surprise as sitting in this chair this morning, because I didn't suppose there was any question that the situation was thoroughly understood; the matters were given to me, stated positively, and I could not misunderstand them, and I am very sorry—also very glad—to have had this experience.

The following is a letter received from the correspondent:⁶⁸

PARIS, July 6, '18.

MY DEAR GENERAL BREWSTER:

I have been these two days getting in touch with the sources of my information—to whom I have given fully such enlightenment as I received concerning the circumstances controlling the situation at Chateau-Thierry (except, of course, such data as you gave me confidentially). But they prefer not to have their names further connected or revealed.

I should like to say over my signature how appreciative I am of the opportunity you afforded me of thoroughly understanding a situation which were statement of facts or partial facts—misjudged.

I am grateful to have been saved from doing what would have been an obvious injustice—not because of the consequence which might fall upon my head—but because I value above all else on this earth straight and fair speaking and writing.

Sincerely,

(Sgd.) _____.

Major General ANDRE BREWSTER.

Room 114, 45 Ave. Montaigne.

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- (3) Report of operations, 3d Division, May 30 to June 20, 1918, by Lieut. Col. Raymond Sheldon, general staff, chief of staff, 3d Division. On file with records G–3, General Headquarters, A. E. F., Washington, D. C.
- (4) Circular No. 188, W. D., May 20, 1920.
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- (6) Special report 2d Division, May 31 to July 9, 1918: Operation around Chateau-Thierry, by Maj. Gen. John A. Lejeune, U. S. M. C. On file, with records G–3, General Headquarters, A. E. F., Washington, D. C.
- (7) F. O. No. 7, Headquarters 2d Division, A. E. F., June 3, 1918.
- (8) Journal of operations, 2d Division, May 30 to July 2, 1918.
- (9) Report of action of the 3d Brigade, June 1 to July 15. On file, with records G–3, General Headquarters, A. E. F., Washington, D. C.
- (10) Report of operations, Medical Department, 2d Division, May 31 to July 10, 1918, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (11) Exhibit “O” to report on activities of G–4–B medical group, fourth section, general staff, G. H. Q., A. E. F.: Report of medical operations at Chateau-Thierry and vicinity, June 1 to September 10, 1918, by Col. Paul C. Hutton, M. C., undated, 4. On file, Historical Division, S. G. O.
- (12) Report of Medical Department activities, 2d Division, A. E. F., prepared under the direction of the division surgeon, undated, Part I, 22. 23. On file, Historical Division, S. G. O.
- (13) Ibid., Part I, 23.
- (14) Ibid., Part I, 24.
- (15) Ibid., Part I, 25, 26.
- (16) Ibid., Part I, 26.
- (17) Ibid., Part I, 25.
- (18) Ibid., Part III, 16, 17.
- (19) Ibid., Part I, 26, 27.
- (20) Outlines of Histories of Divisions, U. S. Army, 1917–1918, prepared in the Historical Section, the Army War College, undated. On file, Historical Section, the Army War College.
- (21) Report of Medical Department activities, 3d Division, A. E. F., prepared under the direction of the division surgeon, undated, Part V, 2. On file, Historical Division S. G. O.
- (22) Ibid., Part IV, 164.
- (23) Ibid., Part I, 48.

- (24) Ibid., Part I, 50.
- (25) Ibid., Part I, 51.
- (26) Ibid., Part I, 52.
- (27) Ibid., Part IV, 73.
- (28) Ibid., Part II, 108.
- (29) Ibid., Part IV, 70.
- (30) Letter of instruction from commander in chief to Lieut. Col. Paul C. Hutton, M. C., May 21, 1918. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 211.01).
- (31) Exhibit "O" to report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F.: Report of medical operations at Chateau-Thierry and vicinity, June 1 to September 10, 1918, by Col. Paul C. Hutton, M. C., undated, 1. On file, Historical Division, S. G. O.
- (32) Report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F., for the period embracing the beginning and end of American participation in hostilities, prepared by Col. S. H. Wadhams, M. C., chief G-4-B, December 31, 1918, 38. On file, Historical Division, S. G. O.
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- (34) Ibid., 35.
- (35) Exhibit "O" to report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F.: Report of medical operations at Chateau-Thierry and vicinity, June 1 to September 10, 1918, by Col. Paul C. Hutton, M. C., undated, 2. On file, Historical Division, S. G. O.
- (36) Military history of the American Red Cross in France, by Lieut. Col. C. C. Burlingame, M. C., undated, 43. On file, Historical Division, S. G. O.
- (37) Exhibit "O" to report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F.: Report on medical operations at Chateau-Thierry and vicinity, June 1 to September 10, 1918, by Col. Paul C. Hutton, M. C., undated, 3. On file, Historical Division, S. G. O.
- (38) Ibid., 4.
- (39) Military history of the American Red Cross in France, by Lieut. Col. C. C. Burlingame, M. C., undated, 46. On file, Historical Division, S. G. O.
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- (41) Ibid., 6.
- (42) Ibid., 7.
- (43) Ibid., 8.
- (44) Ibid., 9.
- (45) Report of Medical Department activities, Evacuation Hospital No. 7, A. E. F., by Col. W. H. Tefft, M. C., commanding officer, undated, 1. On file, Historical Division, S. G. O.
- (46) Exhibit "O" to report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F.: Report on medical operations at Chateau-Thierry and vicinity, June 1 to September 10, 1918, by Col. Paul C. Hutton, M. C., undated, 10. On file, Historical Division, S. G. O.
- (47) Ibid., 11.
- (48) Ibid., 12.
- (49) Memorandum from Col. Paul C. Hutton, M. C., to the chief surgeon, A. E. F., June 16, 1918. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 319.2).
- (50) Exhibit "O" to report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F.: Report on medical operations at Chateau-Thierry and vicinity, June 1 to September 10, 1918, by Col. Paul C. Hutton, M. C., undated, 13. On file, Historical Division, S. G. O.

- (51) Ibid., 14.
- (52) Memorandum from Col. Paul C. Hutton, M. C., to the chief surgeon, A. E. F., June 20, 1918. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 319.2).
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- (57) Ibid., 18.
- (58) Memorandum from Col. Paul C. Hutton, M. C., to the chief surgeon, A. E. F., June 27, 1918. On file, A. G. O., World War Division, Medical Records Section (Chief Surgeon's Files, 319.2).
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- (60) Ibid., 20.
- (61) Ibid., 21.
- (62) Ibid., 23.
- (63) Ibid., 24.
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- (65) Exhibit "K" to report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F.: Report of investigation concerning charges of inefficiency on part of the Medical Department, from the inspector general, A. E. F., to the commander in chief, July 17, 1918, 84-93. On file, Historical Division S. G. O.
- (66) Ibid., 5, 6.
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CHAPTER XI

THE CHAMPAGNE-MARNE OPERATION, JULY 15-17, 1918. THE FIRST CORPS (AMERICAN 26TH AND FRENCH 167TH DIVISIONS); THE AMERICAN 3D, 28TH, AND 42D DIVISIONS ^a

The great German offensive, begun March 21, 1918, had resulted in the enemy's capture of Bapaume, Peronne, and a number of other communities of similar size and importance, and the establishment of a German salient toward Amiens and Compiègne. West of Reims, between May 27 and June 5, the Germans had launched another attack—the Aisne operation—and had driven in a salient extending toward the southwest, which had reached the Marne and had its approximate apex near Chateau-Thierry. They had thus established another salient east of that mentioned above. Between June 9 and 13, in order to connect the apices of these salients they had attempted to widen this salient to the west, in the Montdidier-Noyon operation.¹ Failing in this effort they attacked again on the night of 14-15, both east and west of Reims.

When, on July 15, the enemy began this his final offensive, the first phase of the second battle of the Marne—usually spoken of as the Champagne-Marne defensive—American troops were interspersed with the French on the front attacked. The American First Corps, under control of the French Sixth Army, held a sector 7 km. (4.2 miles) in length between Torcy and Vaux, both inclusive,² having under its command the French 167th Division and the American 26th Division. East of the 26th Division was the French 39th Division, with the 56th Brigade, 26th Division, in support, and beyond it was the American 3d Division holding the south bank of the Marne for 12 km. (7.5 miles) east from Chateau-Thierry. Continuing the line eastward was the French 125th Division, with the 55th Brigade, American 28th Division, in support.³ The American 4th Division was in reserve, divided between the French Second and Seventh Corps.⁴ East of Reims the 42d Division, French Fourth Army, was in support of French troops in the Champagne sector.¹

The brunt of this offensive, so far as American troops were concerned, fell upon the 3d Division, while the French were attacked to the right of that division and in the Champagne sector. Some small units of the American 4th and 28th Divisions gained front line service with our troops or with the French,¹ the 26th Division had a moderate number of casualties,⁵ and five of the battalions of the 42d Division and all of its artillery soon became engaged.¹

The enemy had encouraged his soldiers to believe that the attack of July 15 would conclude the war, with a German peace. Although he made

^a Our troops at this time were elements of French armies.

elaborate plans for the operation, he failed to conceal fully his intentions, and the front of the attack was suspected at least one week ahead. On the Champagne front the actual hour for the assault was known.¹

After a violent artillery preparation by both explosive and gas shells lasting four hours in the Marne area, the German infantry attacked early in the morning of July 15.⁶ The right wing of the French Sixth Army met the attack between Dormans and Fossoy, on the front of the French 125th and the American 3d Divisions.⁶

Southwest of Reims and along the Marne to the east of Chateau-Thierry the Germans were at first somewhat successful, a penetration of 8 km. (4.8 miles) beyond the river being effected against the French division immediately to the right of the 3d Division.⁷ The attack continued on July 16 and 17, but on the latter date it became evident that the Germans had been stopped with heavy losses, and the next day began the great counteroffensive which was to continue until the enemy was compelled to sign the armistice.⁵

FIRST CORPS

The First Army Corps was created by an order dated January 15, 1918.⁸ Its first headquarters were at Neufchateau, and until July 4, 1918, it exercised administrative command over the divisions assigned to it, tactical command being vested in the French units with which these divisions served. On July 4, however, this corps, under control of the French Sixth Army, assumed tactical command of the American 2d and 26th and the French 167th Divisions, and of the front held by the two last mentioned. Corps headquarters were then at Chateau de Lagny. In the Champagne-Marne operation, tactical command of the First Corps consisted of the American 26th and the French 167th Divisions, and 2d then having been assigned to the Third Army Corps, preparatory to the offensive of July, 1918.⁹

MEDICAL DEPARTMENT ACTIVITIES

With the creation of the First Corps its surgeon began so to organize his office that it would include departments corresponding to similar elements of the offices of the division surgeons, with a view to promoting coordination. Though the frequent changes of the divisions assigned to the corps interfered very considerably with the full development of this plan, it nevertheless proved efficacious.¹⁰

As at first contemplated and as later developed, the corps surgeon's office included the corps surgeon, the assistant corps surgeon, an executive officer, a sanitary inspector, consultants in medicine, surgery, urology, orthopedics, and psychiatry, a corps medical gas officer, and the commanding officer, corps sanitary train.¹⁰

The first mentioned of the professional staff joined on July 17, others joining at irregular intervals thereafter.¹¹

The surgeon of the First Corps had moved, with corps headquarters, to La Ferte-sous-Jouarre, on June 30, where the following plan for evacuation

of sick and wounded was published in secret Orders No. 6, Headquarters, First Army Corps, dated July 9, 1918.¹²

1. *Sanitary organization*.—(a) Battalion aid stations, relays of litter bearers, and regimental infirmaries will be established by regimental surgeons under supervision of the division surgeons. Additional sanitary personnel from divisions not in action may be obtained on application to the corps surgeon.

(b) Collecting stations (triage) will be established as follows: 26th Division, Bezu-le-Guery; 167th Division (French), Cocherel.

(c) Stations for slightly wounded. Personnel to be taken from an ambulance company: 26th Division, Ventelet Ferme.

(d) Divisional field hospitals will be established as follows:

For treatment of gassed cases: 26th Division, Luzancy; 167th Division (ambulance), Cocherel.

Gassed cases get only preliminary treatment here, and cases will be evacuated as soon as possible to evacuation hospital from Luzancy to Montanglaust and from Cocherel to Coulommiers.

For treatment of ordinary sick, including venereal and skin diseases: 2d Division, Jouarre; 26th Division, Luzancy; 167th Division, Coulommiers.

For nontransportable wounded: 26th Division, La Ferte-sous-Jouarre; 167th Division, Perreuse.

(e) All military police should be advised as to location of the station for slightly wounded and the collecting stations, and will direct slightly wounded men and litter bearers to these points.

(f) Movement of sick and wounded: By the assignment of one S. S. U. unit in addition to the authorized allowance of ambulances, divisions are responsible for transportation of sick and wounded from the front line to the field hospitals and from field hospitals to evacuation hospitals.

Divisions requiring sanitary transportation additional to this will apply to the corps surgeon.

Movement and routes.—From station for slightly wounded: Those able to return to duty will be returned at once to the line. All others will be evacuated, by truck, if possible, to Evacuation Hospital No. 7, at Montanglaust, by the road Ventelet Ferme—Bezu—Caumont—Chamigny—La Ferte—Montanglaust.

From collecting stations (triage): From Bezu-le-Guery (26th Division), ordinary sick to Luzancy; gassed to Luzancy. Route, Bezu—Caumont—Courcelles—Luzancy. Ordinary wounded to Montanglaust; nontransportable wounded to La Ferte-sous-Jouarre. Route, Ventelet Ferme—Bezu—Caumont—Chamigny—La Ferte-sous-Jouarre.

From Cocherel: Ordinary sick to Coulommiers; gassed to Coulommiers; ordinary wounded to Coulommiers (H. O. E. 52/B); nontransportable wounded to Perreuse.

From field hospitals: 2d and 26th Divisions, all cases requiring and able to stand evacuation to Evacuation Hospital No. 7, at Montanglaust. 167th Division, to H. O. E. 52/B at Coulommiers.

Only nontransportable cases will be held at the field hospital designated for nontransportable wounded. These will be evacuated, as soon as their condition will permit, to Montanglaust for the 26th Division and to Coulommiers for the 167th Division.

Contagious diseases will be evacuated: 2d and 26th Divisions to Evacuation Hospital No. 7, at Montanglaust; 167th Division to Mauperthuis.

Mental cases will be evacuated: 2d and 26th Divisions to Evacuation Hospital No. 7, at Montanglaust; 167th Division to Coulommiers, but will be immediately transferred to Mauperthuis.

(g) All evacuations for corps troops will be as prescribed for the nearest division.

THE 26TH DIVISION

When the enemy attacked on July 15, the line of the 26th Division ran, roughly, from Vaux northwest to a point on the northeast edge of Triangle

and one-half kilometer south of Bouresches; thence along the west edge of Bouresches to the east edge of the Bois de Belleau, to a point about one-half kilometer south of Belleau, and thence north of west to a point one-fourth kilometer west of Torcy.¹³ Though the Germans attacked this portion of the line, it was not the part that was most heavily involved, although it was subjected to harassing artillery and machine-gun fire. Some of the enemy took a part of the line by infiltration, but were repulsed.

MEDICAL DEPARTMENT ACTIVITIES

Aid stations were established preferably in cellars of farm buildings, but if these were not available they were opened at suitable locations under stone culverts, in dry water courses, or in small, shallow excavations.¹⁴ The regimental and battalion aid stations of the 101st Artillery were set up at Montreuil and at D'Issonge Ferme, respectively.¹⁵

Battalion aid stations of the 102d Artillery were located in Domptin and one-half kilometer (0.9 mile) east of it.¹⁶ Supplies were replenished by ambulances and bearers.

AMBULANCE COMPANIES

Dressing stations were established by Ambulance Company No. 104 at la Voie-du-Chatel and by Ambulance Company No. 103 at Villiers-sur-Marne. The former was very active, the latter only slightly so.¹⁷ United States Army Ambulance Section No. 502 evacuated to these stations from the ambulance head. At Bezu-le-Guery, just beyond the enemy artillery zone, Ambulance Companies No. 101 and No. 102 were stationed.¹⁷

FIELD HOSPITALS

Field Hospital No. 102 operated a triage at Bezu-le-Guery. Field Hospitals No. 101 and No. 104 together cared for the slightly wounded, gassed, and sick in a large school building at Luzancy, while Field Hospital No. 103, at La Ferte-sous-Jouarre, received the seriously wounded. This hospital, with 6 operating teams and 35 female nurses, was completely equipped and was favorably established in a large convent, well lighted for its purpose.¹⁸

All field hospitals were evacuated by G. M. C. ambulances and by trucks of the sanitary train to Evacuation Hospital No. 7 at Chateau Montanglaust.¹⁸

THE 3D DIVISION

The 3d Division occupied a frontage of almost 12 km. (7.4 miles) on the south bank of the Marne, from the eastern outskirts of Chateau-Thierry to the bend of the river about 2 km. (1.2 miles) east of Chartèves. The front line of defense consisted of isolated pits and machine-gun emplacements dug near the river's edge. Close in rear of this line, about 364 meters (400 yards) from the river, was the high embankment of the Paris-Metz Railway, which provided a much stronger defensive position and gave a continuous line of protection from rifle fire. Beginning at midnight July 14-15 the divisional

Infantry and all auxiliary troops stationed in the front line were subjected to bombardment by both high-explosive and gas shells.¹⁹ This bombardment was directed for a period of 10 hours against the areas along the crest of the hills, and for a shorter period against the foreground nearer the river.¹⁹ The enemy infantry attack commenced about 3.20 a. m., July 15, regiments seeking to cross the river by means of boats and pontoon bridges.¹⁹ The most violent attack was that between Fossoy and Moulins. The 6th Brigade, consisting of the 30th and 38th Infantry, defending the right flank, effectually frustrated the enemy's contemplated advance to the south along the valley of the Surmelin River.²⁰ "Although the rush of German troops overwhelmed some of the front-line positions, causing infantry and machine-gun companies to suffer in some cases a 50 per cent loss, no German soldier crossed the road from Fossoy to Crezancy except as a prisoner of war, and by noon of the following day there was no German in the foreground of the 3d Division except the dead."²¹ "On this occasion a single regiment of the 3d Division wrote one of the most brilliant pages in our military annals. It prevented the Germans crossing at certain points on its front while on either flank the Germans who had gained a footing pressed forward. Our men, firing in three directions, met the Germans with counterattacks at critical points and succeeded in throwing two German divisions into complete confusion, capturing 600 prisoners."⁷

From July 16 to 19 the division remained in its sector on the Marne, with the right flank regiment facing to the east, as a measure of protection against the German line which had crossed the Marne.²¹

MEDICAL DEPARTMENT ACTIVITIES

Evacuation of patients was facilitated, as the sector had good roads and this despite the fact that they were damaged to a certain extent by the enemy artillery barrage on the night of July 14-15.²² This was placed as far back as Pertibout and Essises.²² Besides the casualties involved in the present engagement, 382 which had occurred in the infantry between June 4 and 14 were evacuated by the same route as that maintained during the engagement in question.²³

The division surgeon directed the location of the various dressing stations and other Medical Department formations and moved them forward as occasion required.²⁴

With troops the regimental aid station of the 4th Infantry was located at Grand Ballois Ferme, and those of its battalions at Blesmes, Etampes, Chierry, and in the woods neighboring Nesles. Total casualties taken care of in the five days, July 15 to 20, approximated 275. Ambulance service was prompt and patients were evacuated quickly.²⁵

The regimental aid station of the 7th Infantry was established at Courboin, while battalion aid stations were placed at Le Houy Ferme, 910 meters (1,000 yards) northwest of La Rocq Ferme, and at a point 273 meters (300 yards) north of the latter farm. The wounded began coming in almost immediately, but were evacuated quickly as soon as the first shock of the attack was

over. Motor trucks, escort wagons, and other vehicles supplemented the ambulance service of the regiment.²⁶

The regimental aid station of the 30th Infantry was located in Bois d'Aigremont below Crezancy, with the three battalion aid stations in the same woodland or in Crezancy. Of the 450 casualties (approximately) which the regimental stations cared for, the majority were seriously wounded, the slightly wounded and gassed making their way unassisted to the rear.²⁷

The regimental aid station of the 38th Infantry was at St. Eugene, while those of its 1st and 2d Battalions were at Connigis, with an advanced aid station for the 2d Battalion at Moulins.²⁸ A station was also operated at Paroy.²⁸ The stations at Connigis and Paroy were located in wine cellars which afforded ample space and some protection: that at Paroy accommodated 70 patients.²⁸ On the 16th of July, as this part of our line was drawn back, the last named station fell into the hands of the enemy.²⁸ Meanwhile a medical officer who had gone for assistance secured the aid of an infantry patrol party, two ambulances, and a Y. M. C. A. truck. The station was then soon recaptured and held until all patients had been evacuated.²⁸ The aid stations of the 1st and 2d Battalions were then established at St. Eugene and the regimental station at Courboin, that of the 3d Battalion remaining at Connigis.²⁸ On the night of the 17th the medical officer who had evacuated the station at Paroy returned there with his battalion, where he was killed on the following day.²⁸

The aid station of the 8th Machine Gun Battalion was operated sometimes independently, sometimes in conjunction with those of other troops. On July 15, when located at Bochage Ferme, it was operated independently.²⁹ That of the 9th Machine Gun Battalion was at Montbazen, where it gave refreshments as well as treatment to all wounded received.³⁰ The 7th Battalion, on July 15, was ordered east of Courbon, where an aid station was established in an old farmhouse.³¹

The aid station of the 1st Battalion of the 10th Field Artillery was located at Le Moussete, 1 km. (0.621 mile) northwest of St. Eugene. As the road to the place was blocked during the 15th (until late at night), it was impossible to evacuate all the wounded that came in.³² They were carried by litter to St. Eugene and thence by ambulance or truck. Disabled from Battery B were evacuated more easily through the aid station of the 2d Battalion at Greves Ferme, which was directly accessible by ambulance and was fairly well protected against shells and gas.³²

AMBULANCE COMPANIES

Headquarters of the ambulance company section was at Verdelot from July 15 to 24.²⁴ The excellent roads allowed ambulances to make good time in going to and in returning from the front. Although 60 ambulances were available, it soon became apparent that the number was insufficient and division trucks were secured for transporting the slightly wounded, as many as 80 of these vehicles being used at one time.²³ During the period of intense

activity, beginning July 15, the sanitary train evacuated approximately 8,000 patients.²⁴

Ambulance Company No. 5 was stationed at Essises, where it had been located since June 3. Here it operated a main dressing station, maintaining also an advance dressing station at Courboin, with 1 officer, 1 noncommissioned officer, and 8 privates.²⁴ Its ambulance schedule, mentioned in the preceding chapter, was temporarily interrupted by this offensive, during which it evacuated all wounded to Field Hospital No. 27 at Verdelot and all gas cases to Field Hospital No. 5 at Ville Chamblon.²⁴ One medical



FIG. 54.—Dressing station operated by Ambulance Company No. 5, at Courboin

officer and 20 enlisted men of this company reinforced the regimental aid station of the 38th Infantry from July 15 to 17, when the regiment was relieved.²⁴ One medical officer and 10 men were also sent on July 17 to the regimental infirmary of the 38th Infantry at Connigis. Of these, 10 became casualties.²⁴ From July 15 to 22, when Ambulance Company No. 5 moved from Essises to Blesmes, it evacuated approximately 2,700 patients, of which number a little more than one-half were transported recumbent.²⁴ One ambulance driver was killed, two were wounded, and four ambulances were put out of use by enemy shell fire.²⁴

Ambulance Company No. 7 was located on July 15 at Pertibout, where it operated a dressing station until July 22.³³ On the 15th it assigned 1

medical officer, 1 noncommissioned officer and 10 enlisted men with the 38th Infantry, working between Courboin and Crezancy.³³ Ambulance Company No. 26 was located on July 15 at Verdelot, where it remained throughout the month, occupied solely with transportation.³³ Ambulance Company No. 27, parked at La Ferotterie from July 15 to 20, evacuated with all available ambulances from Field Hospital No. 27, at Verdelot, to Field Hospital No. 26, at Coulommiers, and to Red Cross Hospital No. 107, at Jouy-sur-Morin.³⁴ United States Army Ambulance Section No. 524, from July 15 to 31, assisted in evacuating the wounded from dressing stations to field hospitals.³⁵

FIELD HOSPITALS

From July 15 to 29 headquarters of the field hospital section was at Verdelot.³⁴ The field hospitals had reached the Marne area on June 1 and had begun operations on June 3.³⁶ Field Hospital No. 5, equipped as a gas hospital, was located at Ville Chamblon, about 10 km. (6.2 miles) behind the lines.³⁴ Field Hospital No. 7 was in reserve at Chateau Villiers, near St. Barthelemy, with the following personnel on detached service with the organizations mentioned: 1 officer, 1 noncommissioned officer, and 4 privates with the 6th Engineers; 1 noncommissioned officer and 15 privates with the 4th Infantry; 1 officer with the 10th Field Artillery; 1 noncommissioned officer and 12 privates with the 7th Infantry.³⁷

Field Hospital No. 27, at Verdelot, worked with a French hospital in a school building at that place, studied the triage system of the latter and so developed one of its own.³⁸ At this hospital were treated nontransportable and slightly wounded, neuroses, sick (except contagious cases), and some others, including some gassed cases sent to it through error.³⁵ About the middle of July it was reinforced by 1 shock team, 4 surgical teams, and 9 nurses.³⁸ From July 15 to 28 it admitted 4,512 patients, of whom about three-fourths came from the 3d Division, the remainder from the 28th.³⁵ Field Hospital No. 26, at Coulommiers, 30 km. (18.6 miles) from the line, had functioned at first and prior to this defensive as the divisional evacuation hospital,³⁶ there being none near the sector until Evacuation Hospital No. 7 and Mobile Hospital No. 1 were established and began to receive patients at Chateau Montanglaust, 2 km. (1.2 miles) from Coulommiers, on June 13.³⁸ This it will be noted was a month before the Champagne-Marne defensive action began.

To the rear of the 3d and other divisions near Chateau-Thierry, evacuations were effected through the Red Cross hospital at Juilly, Evacuation Hospital No. 7 and Mobile Hospital No. 1, at Chateau Montanglaust, and Army Red Cross Hospital No. 107, at Jouy-sur-Morin.³⁹ The hospitals at Chateau Montanglaust had a total capacity of 1,100 beds, with good facilities for evacuating by train. The hospital at Jouy-sur-Morin had some 800 beds and effected its train evacuation from La Ferte-Gaucher, 4 km. (2.4 miles) distant.⁴⁰

THE 28TH DIVISION

When the enemy attacked on July 15, in the fifth and last German offensive, the 28th Division was in the general support line back of the French, one of its brigades being to the east, the other to the west of the 3d Division.⁴¹ Only small elements of the command actually participated in front-line service as tactical units. Four companies of the 109th and 110th Infantry were especially engaged in repelling the attack on July 15,⁴¹ and the 2d Battalion of the 111th Infantry attacked in the Bois D'Aigremont on the 16th. All troops in the support lines had been subjected on the night of July 14-15 to intense bombardment. As troops were forced back during the German assault, the support line became the front line, in which American and French troops were intermingled.⁴¹

MEDICAL DEPARTMENT ACTIVITIES

AMBULANCE COMPANIES

The Champagne-Marne defensive was the first action in which medical units of the 28th Division were actively engaged. As a matter of fact its ambulance companies, Nos. 110, 111, and 112 (motorized), did not receive their vehicles until July 19, when 41 ambulances were hurriedly brought up from St. Nazaire.⁴² Ambulance Company No. 109 (animal-drawn) did not receive its transportation until August 13.⁴³ During this defensive, the three motorized companies were held in reserve at Le Rousset. To serve the elements of the division engaged, Ambulance Company No. 110 established a dressing station at Union Chateau, near Artonges.⁴⁴ Wounded, both French and American, were cared for here in large numbers.⁴⁴

FIELD HOSPITALS

Field Hospital No. 109 was moved from Marlande on July 17 to La Ferotterie, where it immediately opened in a school building, but no patients were received.⁴⁵ Meanwhile, on July 16, Field Hospital No. 110 moved to Fontaine Tige, where Field Hospital No. 111 had been located since July 12.⁴⁶ The former unit loaned certain personnel to the latter, which had established an operating room and shock ward in an abandoned building, pitched tentage and begun receiving patients on July 16.⁴⁶ On that date, Field Hospital No. 112 moved up from Marlande to a château on the outskirts of Artonges and established three ward tents in a cleared space in the wood surrounding it.⁴⁷ Ambulance Company No. 110 utilized the first floor of the same château as a dressing station, and other parts were occupied by brigade headquarters. Patients began to arrive on the same day.⁴⁷ Three additional ward tents were pitched, carefully camouflaged, and piped for water from springs on an adjacent hillside.⁴⁷ Shower baths for mustard gas cases were improvised in the basement of the château, and great quantities of clothing made available for these patients.⁴⁷ Only gas cases were sent to this point, other casualties in this vicinity being sent to Field Hospital No

27, at Verdelot, with the result that from mid-afternoon of July 16 to July 23, inclusive, this hospital received but 59 patients.⁴⁷ These were evacuated from time to time to Field Hospital No. 111, at Fontaine Tige.⁴⁷

THE 42D DIVISION

On June 21 the 42d Division was moved to a position east of Reims, in the Champagne sector, where it became a part of the French Fourth Army and occupied the support lines during the German offensive of July 15. With other troops, the division was subjected to intense preliminary bombardment. All of the artillery was engaged, and after the German infantry had penetrated the front lines, five battalions of the infantry in the support lines also became involved.⁴⁸

MEDICAL DEPARTMENT ACTIVITIES

The division surgeon's office was located at Vadenay, but receiving a direct hit which caused several casualties, including three officers killed, it was moved to Ecury-sur-Coole.⁴⁹

On July 15 the division surgeon secured the detail of 12 litter bearers from each company and battery to aid Medical Department personnel assigned to them. These men, who wore a blue brassard marked with the letters "L. B.," served as litter bearers in all subsequent engagements.⁵⁰

Battalion and regimental aid stations of Infantry organizations were well protected and were able to operate satisfactorily, but those of the Artillery were not so fortunate. Personnel at the latter points was compelled to work practically in the open, in Adrian barracks, shallow trenches, or improvised splinter-proof shelters.⁵¹ The intensity of the bombardment caused heavy casualties at the beginning of the attack, and removal of the wounded became difficult. Back areas were so heavily shelled that the withdrawal of several Medical Department formations in the rear was necessitated, as noted below.⁵¹ The length of haul to these was thereby increased and evacuation proportionately retarded. It proved difficult to maintain proper liaison between ambulance companies and aid stations.⁵¹ Because of the damage to telephone lines, runners were used to maintain communication with battalion and regimental command posts. By 11 o'clock on July 16, the initial force of the attack had been spent and casualties then decreased.⁵¹ Thereafter evacuations proceeded more promptly, numerous and good roads facilitating removal of the wounded.⁵¹

Concerning the service of aid stations, special allusion is made in the divisional medical report to the value of light trestles which were brought up on the battalion medical carts.⁵² These were used to support litters, both in the open and in the narrow dugouts, and a "three-way fold" of blankets reaching to the ground allowed them to be used as shock tables. The carts, after delivering their supplies, withdrew to the echelon of horse-drawn vehicles in the rear.⁵²



FIG. 55.—Aid station, 167th Infantry, 42d Division, Souain, France, July 17, 1918



FIG. 56.—Triage, 42d Division, near Suippes, France, July 17, 1918

AMBULANCE COMPANIES

Dressing stations had been previously established at Miomandre and Suippes, but up to July 15 they functioned chiefly as regulating points for the ambulance service.⁵³ One ambulance was stationed with each battalion, except in the case of two battalions intermingled with the French, and these, by mutual agreement, were served by United States Army Ambulance Section No. 580 through the French *poste de secours*. Four litter bearers were detailed at each battalion aid station.⁵³ As Suippes was heavily shelled on July 15, the dressing station withdrew from that place to a point just above



FIG. 57.—French and American wounded being received at the dressing station at Epieds, operated by 117th Sanitary Train, 42d Division, July 27, 1918

Bussy-le-Chateau.⁵⁴ When the field hospitals at Bussy-le-Chateau were forced to vacate that locality, this station collected and sorted patients, sending the most serious cases promptly to the rear, but sheltering, feeding, and treating the others until such times as more transportation became available.⁵⁴ Trucks were used to move the slightly wounded, and all available vehicles in the train, as well as those of an evacuation ambulance company which reinforced this service, were used to work between Bussy and Ecury-sur-Coole.⁵⁵ The station at Miomandre remained at its former site.⁵⁴ From time to time additional and relief litter bearers were dispatched to the front, where they served at battalion aid stations and also removed patients from the lines.⁵⁵

FIELD HOSPITALS

Field Hospitals No. 165 and No. 167 had taken over a French barracks hospital at Bussy-le-Chateau, 18 km. (11.1 miles) behind the line, on July 7, and in conjunction with Mobile Hospital No. 2, at Vatry, had made preparations on a large scale for the treatment of wounded and gassed.⁵⁶ During the morning of July 15 the hospital group at Bussy-le-Chateau received five direct hits, which killed some of the personnel and wounded many patients. The latter were moved to nearby trenches and abri and thence to Ecurey-sur-Cooles, where the hospitals had moved.⁴⁹ As this move considerably increased the difficulty of evacuating from the lines, a detail from Field Hospital No. 168 and American surgical teams were sent to a French hospital at Chalons-sur-Marne, where nontransportable American wounded were received; but persistent bombing of this town rendered it a very unsuitable location for the accumulation of patients.⁵⁷ On July 10 Field Hospitals No. 166 and No. 168 had been ordered to Ecurey-sur-Cooles to cooperate with Evacuation Hospital No. 4 in the establishment of another hospital group, and they operated here during this defensive.⁴⁹ Enemy aviators frequently bombed this point, but hospital service was carried on uninterruptedly. A total of 2,949 cases were received here, of whom 2,519 were gassed.⁵⁷ The sick and slightly wounded were sent by ambulance to a camp hospital at Mailly, and evacuations were made from Evacuation Hospital No. 4 and Mobile Hospital No. 2 by hospital trains to base hospitals in the interior.⁵⁸

MEDICAL DEPARTMENT ACTIVITIES IN REAR OF THE DIVISIONS

The medical organization which had gradually been built up in rear of our divisions has been described in some detail in the latter part of Chapter X. An officer representing the medical department with the fourth section of the general staff, as noted, had been appointed chief surgeon of the Paris group, as our divisions operating in the Marne area were now designated. The following units were under his jurisdiction on July 15, 1918:

Evacuation Hospital No. 7, at Chateau Montanglaust.

Mobile Hospital No. 1, at Chateau Montanglaust.

Army Red Cross Hospital No. 107, at Jouy-sur-Morin.

Evacuation Hospital No. 8, at Juilly.

Army Red Cross Hospital No. 105, at Juilly.

Wounded from the 3d Division flowed naturally into the hospital at Jouy-sur-Morin, while Evacuation Hospital No. 7, at Chateau Montanglaust, received all cases from the 26th Division.⁵⁹ The 28th evacuated to both points.⁵⁹ United States Army Ambulance Section No. 578 reported to the 28th Division, which was assisted also by the French.⁵⁹ Practically all the battle casualties from the 3d Division were wounded, while the majority of those from the 26th were gassed.⁵⁹ As a result of the many wounded of the 3d Division, the hospital at Jouy-sur-Morin began to fill and unoperated wounded to accumulate there. One hundred and fifty of these slightly wounded were transferred to Evacuation Hospital No. 7 for operation.⁵⁹ The

evacuation hospital at Juilly not being so situated that it could receive patients direct from the front, all its available surgical teams were sent to Evacuation Hospital No. 6, at Chateau Montanglaust, and to Red Cross Hospital No. 107, at Jouy-sur-Morin.⁶⁰ Every unit and every individual was now working to capacity, the latter securing only about 4 hours rest out of the 24. Those who suffered most were not the operating teams, hard driven as they were, but the litter bearers.⁶⁰ At 11 p. m. of July 15, enemy aviators bombed the hospitals at Chateau Montanglaust and at Jouy-sur-Morin, without casualties at the former but killing 1 and wounding 18 patients and personnel at Jouy-sur-Morin, including 1 nurse.⁶⁰ Four of those wounded by this attack died.⁶¹ The enemy volplaned downward toward the unit at Jouy-sur-Morin before releasing his bombs.⁶¹ Concerning this occurrence, the chief surgeon of the Paris group reported: "That the assassination of these wounded soldiers was premeditated, planned, and cruelly executed there can be no doubt. * * * Both hospitals were clearly marked by the large red cross, which must have been clearly evident on the night in question. Enemy planes had been over the place frequently, and it is safe to conclude that the hospitals were the direct objects of attack, for both were isolated from near-by villages."⁶¹

By July 16, hospital trains, mostly American, were constantly loading at Coulommiers, whose need of ambulances was alleviated by a French ambulance section of 20 cars.⁶¹ By morning of the 17th more than 3,000 patients had been evacuated, most of them from the 3d and 26th Divisions.⁶² On that date a trainload of unoperated cases was sent to Paris after due notice had been sent the hospitals there so that all would be in readiness for prompt treatment.⁶² By 6 p. m. of July 17 all evacuable wounded had been cleared from the field hospitals and all operations at the evacuation hospitals were up to the minute.⁶² During July 16 and 17, 3,564 patients were evacuated by Evacuation Hospital No. 7.⁶³

Two new evacuation hospitals were now en route to this area, and sites for them were sought in the vicinity of Dammartin.⁶³ No information concerning future troop movements was obtainable.⁶⁸ The hospitals were secured and supplies replenished, and arrangements were such that with rapid supply of hospital trains and provision of more operating teams it appeared that requirements of the troops could well be met.⁶³ About midnight of July 18 the chief surgeon, Paris group, was informed of the removal of the 1st and 2d Divisions from Dammartin to the vicinity of Soissons.⁶⁴

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CHAPTER XII

THE AISNE-MARNE OPERATION; JULY 18 TO AUGUST 6, 1918. DIVISIONS PARTICIPATING WITH THE FRENCH: ^a ^b 1ST, 2D, 3D, 4TH (JULY 18-22 AND JULY 28); 32D (JULY 30 TO AUGUST 2); FIRST CORPS, 26TH, 42D, AND, FROM AUGUST 3, 4TH; THIRD CORPS (FROM AUGUST 3), 3D, 32D, AND 28TH

The following extracts are quoted from the Final Report of General Pershing:^{1 2}

The Marne salient was inherently weak and offered an opportunity for a counter-offensive that was obvious. If successful, such an operation would afford immediate relief to the allied defense, would remove the threat against Paris, and free the Paris-Nancy Railroad. But, more important than all else, it would restore the morale of the Allies and remove the profound depression and fear then existing. Up to this time our units had been put in here and there at critical points as emergency troops to stop the terrific German advance. In every trial, whether on the defensive or offensive, they had proved themselves equal to any troops in Europe. As early as June 23 and again on July 10, at Bombon, I had very strongly urged that our best divisions be concentrated under American command, if possible, for use as a striking force against the Marne salient. Although the prevailing view among the Allies was that American units were suitable only for the defensive, and that at all events they could be used to better advantage under allied command, the suggestion was accepted in principle, and my estimate of their offensive fighting qualities was soon put to the test.

* * * * *

The selection by the Germans of the Champagne sector and the eastern and southern faces of the Marne pocket on which to make their offensive was fortunate for the Allies, as it favored the launching of the counterattack already planned. There were now over 1,200,000 American troops in France, which provided a considerable force of reserves. Every American division with any sort of training was made available for use in a counter-offensive.

General Pétain's initial plan for the counterattack involved the entire western face of the Marne salient. The First and Second American Divisions, with the First French Moroccan Division between them, were employed as the spearhead of the main attack, driving directly eastward, through the most sensitive portion of the German lines, to the heights south of Soissons. The advance began on July 18, without the usual brief warning of a preliminary bombardment, and these three divisions at a single bound broke through the enemy's infantry defenses and overran his artillery, cutting or interrupting the German communications leading into the salient. A general withdrawal from the Marne was immediately begun by the enemy, who still fought stubbornly to prevent disaster.

The First Division, throughout 4 days of constant fighting, advanced 11 kilometers (6.8 miles), capturing Berzy-le-Sec and the heights above Soissons and taking some 3,500 prisoners and 68 field guns from the 7 German divisions employed against it. It was relieved by a British division. The Second Division advanced 8 kilometers in the first 26 hours, and by the end of the second day was facing Tigny, having captured 3,000 prisoners

^a From the standpoint of medical service the attack of the 1st and 2d Divisions toward Soissons separates naturally from the later stages of the Aisne-Marne operation. This, as will be noted, has been taken into account in preparing this chapter.

^b Activities of the 3d, 32d, and 28th Divisions, for convenience of description, are considered under the Third Corps.

and 66 field guns. It was relieved the night of the 19th by a French division. The result of this counteroffensive was of decisive importance. Due to the magnificent dash and power displayed on the field of Soissons by our First and Second Divisions, the tide of war was definitely turned in favor of the Allies.

Other American divisions participated in the Marne counteroffensive. A little to the south of the Second Division, the Fourth was in line with the French and was engaged until July 22. The First American Corps, Maj. Gen. Hunter Liggett commanding, with the Twenty-sixth Division and a French division, acted as a pivot of the movement toward Soissons, capturing Torcy on the 18th and reaching the Chateau-Thierry—Soissons road on the 21st. At the same time the Third Division crossed the Marne and took the heights of Mont St. Pere and the villages of Chartevès and Jaulgonne.

In the First Corps the Forty-second Division relieved the Twenty-sixth on July 25 and on the 26th extended its front, relieving the French divisions. From this time until August 2 it fought its way through the Forest de Fère and across the Ourcq, advancing toward the Vesle until relieved by the Fourth Division on August 3. Early in this period elements of the Twenty-eighth Division participated in the advance.

Farther to the east the Third Division forced the enemy back to Roncheres Wood, where it was relieved on July 30 by the Thirty-second Division from the Vosges front. The Thirty-second, after relieving the Third and some elements of the Twenty-eighth on the line of the Ourcq River, advanced abreast of the Forty-second toward the Vesle. On August 3 it passed under control of our Third Corps, Maj. Gen. Robert L. Bullard commanding, which made its first appearance in battle at this time, while the Fourth Division took up the task of the Forty-second Division and advanced with the Thirty-second to the Vesle River, where, on August 6, the operation for the reduction of the Marne salient terminated.

In the hard fighting from July 18 to August 6 the Germans were not only halted in their advance but were driven back from the Marne to the Vesle and committed wholly to the defensive. The force of American arms had been brought to bear in time to enable the last offensive of the enemy to be crushed.²

* * * * *

DIVISIONS PARTICIPATING WITH THE FRENCH

THE 1ST DIVISION

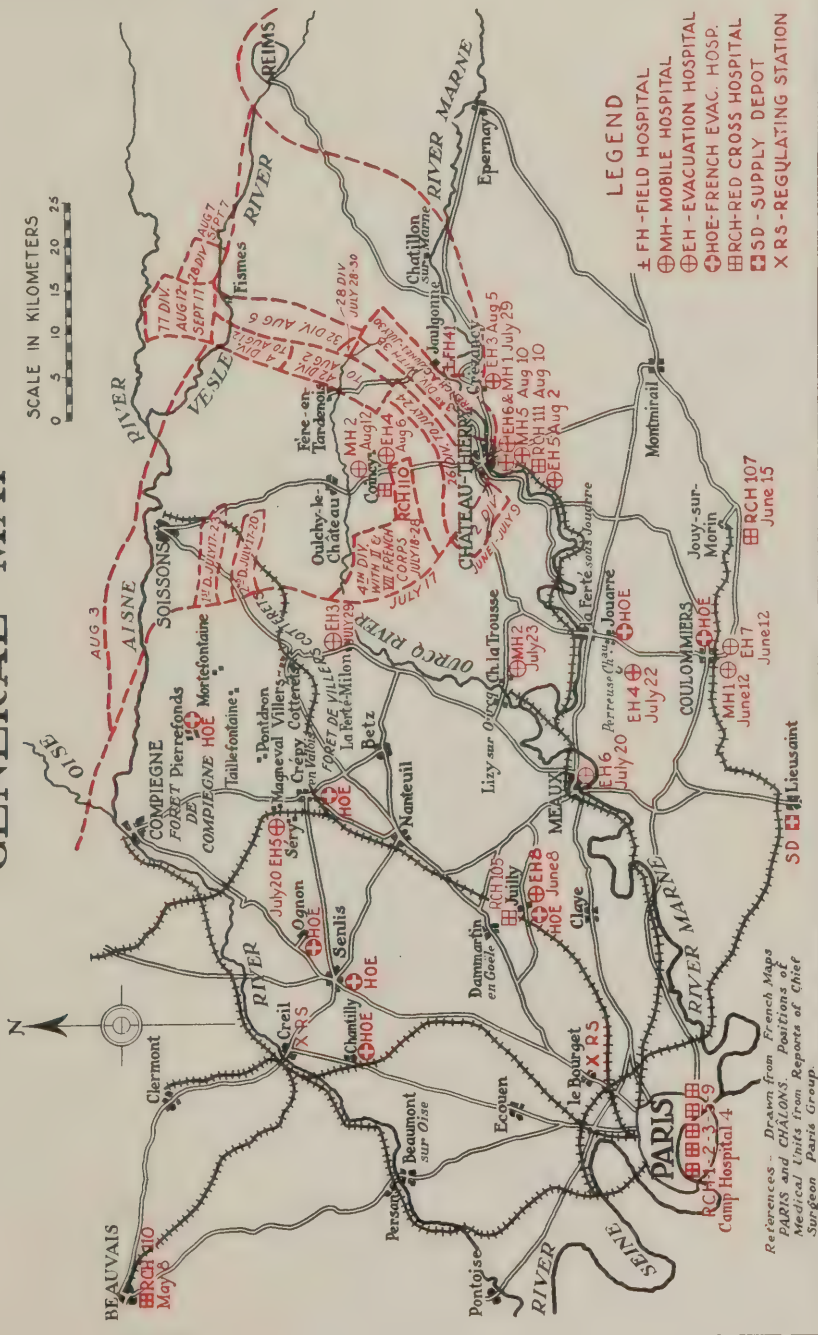
On July 15, 1918, orders were received from the French Tenth Army, placing the 1st Division under the French Twentieth Army Corps, and the same date orders from the latter corps directed the movement of that division in the direction of the sector held by the French Twentieth Corps, southwest of Soissons. This movement began during the night of July 15-16, the numerous elements of the division being carried in trucks. On July 16, the division, P. C., was established at Mortefontaine. During the night of July 17-18 the division marched to its position, on the extreme left of the Twentieth Corps southwest of Soissons.³

For four days the division advanced against determined resistance, finally crossing the Soissons—Chateau-Thierry road and bringing Soissons itself under American guns. The division advanced 11 km. (6.8 miles), captured 3,500 prisoners, 68 guns, and quantities of other materials.⁴

The following extracts from the divisional report of operations describe its activities here in greater detail:⁵

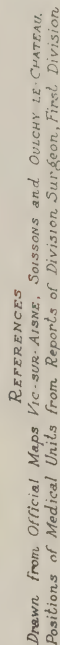
July 17 orders were received from the 20th C. A. that the 10th Army French would make an offensive to break the enemy's front between the Aisne and the Ourcq and would

MARNE SALIENT GENERAL MAP



JULY 17-23, 1918.

Scale in Kilometers



Battle lines, taken from existing orders and maps, are approximate.

push in the direction of Fere-en-Tardenois. * * * The attack was ordered for 4.45 a. m. July 18. It was not to be preceded by artillery fire, but the advance was to be covered by a rolling barrage. * * *

All troops were in place in sufficient time to begin the attack at 4.35 a. m. At 5.30 a. m. the 1st objective had been attained by all troops, with comparatively few losses, and there was little resistance encountered—mostly on the right. At 7.15 a. m. the right of the attack had reached the 2d objective. The left of the division was on the west side of the Missy ravine. Shortly afterwards the 2d objective was reached by all troops. The 2d Brigade had heavy fighting in the Missy ravine. After the halt at the 2d objective, the 2d Brigade was unable to continue the advance to the 3d objective on this day.

The 1st Brigade advanced to the 3d objective and pushed patrols out in front of the objective. * * * At the end of the day the situation was: 2d Brigade on 2d objective * * *, 1st Brigade on 3d objective, with left flank extended to establish liaison with the 2d Brigade. * * *

On the night of July 18–19 orders were received from the 20th C. A. that the 10th Army would continue the attack at 4 a. m. July 19th. * * *

In conformity with these orders the division attacked at 4 a. m. * * * In liaison with the Moroccan Division, the 1st Brigade was able to advance and to occupy a line extending from the head of the Chazelle ravine to its junction with the 2d Brigade, on the Soissons—Paris road. The 2d Brigade continued to suffer heavily from machine-gun fire and was unable to advance beyond the Soissons—Paris road at this time. * * * At 5.30 p. m., in liaison with the 153d D. I. on the left, the division again attacked. * * * This operation was successful, although many casualties were suffered from machine-gun fire from strong points to the north. At night the front of the division was marked by Ferme de Mt. de Courmelles—edge of Ploisy ravine—Chazelle. The casualties suffered in this day's operation were heavy; probably 3,000 for this day and 4,500 for the two days. * * * On July 20th orders were received from the 20th C. A. that on account of the difficulties the 153d D. I. had encountered in its progress the 1st Division would be charged with the taking of Berzy-le-Sec, formerly in the zone of the 153d D. I., and that the zone of action of the 1st Division would extend to the north of the village. In compliance with the above orders the division attacked at 2 p. m. for the purpose of taking Berzy-le-Sec and heights to the north and straightening the front of the division on the general line Berzy-le-Sec—Buzancy. * * * The 2d Brigade suffered very heavily from machine-gun nest to north, which had not yet been taken and was not able at this time to take Berzy-le-Sec. The 1st Brigade, in liaison with the Moroccan Division, crossed the railroad and advanced to the vicinity Bois Gerard, Visigneux, and Aconin farm, retiring its left flank to connect with the 2d Brigade. The situation at nightfall was: 28th Infantry on plateau in front of Berzy-le-Sec; 26th Infantry dug in along road between Berzy-le-Sec and Chazelle; 1st Brigade in liaison with the 2d Brigade, and with Moroccan Division at Visigneux. Casualties continued heavy; approximately 1,000 for the day. * * *

During the night of July 20–21 orders were received from the 20th D. I. that the corps would attack on the morning of July 21 at 4; * * *. The first objective was given as Berzy-le-Sec (inclusive) the heights north and east of Buzancy-Buzancy (exclusive).

In conformity with these orders the division attacked at 4 a. m., July 21. * * * The 1st Brigade was sent forward * * * at 8.30 a. m. * * * the 2d Brigade advanced * * * and at 9.15 took Berzy-le-Sec. * * *

The line at nightfall was the heights north of Berzy-le-Sec, the Chateau-Thierry—Soissons road, south of the Sucrerie, and the heights north of Visigneux. Casualties continued heavy. * * *

On July 22 the 26th Infantry occupied the Sucrerie. * * * Casualties were lighter. * * * Orders were received for the relief of the division by the 15th Scottish Division, beginning the night of July 22–23 * * * and ending July 23–24. * * *

In accordance with the above orders all elements of the division except the Field Artillery brigade, the ammunition trains and the sanitary units were relieved and withdrawn from the sector on the night of July 22-23.³

MEDICAL DEPARTMENT ACTIVITIES

The division surgeon's office was located at Pierrefonds-les-Bains before the attack and was then moved to Mortefontaine and finally to Cœuvres-et-Valsery.⁵



FIG. 58.—Advance post and aid station, 1st Division, Missy-aux-Bois, France, July 20, 1918

Regimental aid stations with troops were located as follows:⁵

16th Infantry: Cutry, Missy-aux-Bois.

18th Infantry: Dommiers, Chaudun.

26th Infantry: Cutry, Missy-aux-Bois, woods in front of Berzy-le-Sec.

28th Infantry: Mortefontaine, Cutry, Missy-aux-Bois, Berzy-le-Sec.

5th Field Artillery: Mortefontaine, St. Agnan Ferme, Cœuvres-et-Valsery, Cutry, Missy-aux-Bois.

6th Field Artillery: Mortefontaine, Cœuvres-et-Valsery.

7th Field Artillery: Cœuvres-et-Valsery, Missy-aux-Bois.

1st Engineers: Cœuvres-et-Valsery, Cutry, Paris—Soissons road.

During the entire advance battalion aid stations were located in shell holes, old gun emplacements, in caves or cellars, and behind hills, within

their shelter. These stations were very mobile, being almost constantly on the move, and keeping in as close touch as possible with the troops they served.⁵

The medical personnel of the regiments served with their organizations, regimental surgeons establishing their stations in the vicinity of regimental headquarters; while battalion surgeons, with their enlisted personnel, accompanied their units and established aid stations and collecting points as close to the fighting line as the terrain would permit.⁶ At first there was



FIG. 59.—First-aid station, 1st Division, immediately back of the front line trenches, Missy-aux-Bois, July 17, 1918

a shortage of medical supplies at the front, as they were not being brought forward rapidly enough, and in an effort to meet deficiencies German material of this character was hunted for on the field.

For the first two days, supplies were carried in Hospital Corps pouches and in sacks, or "feed bags," as they were called by the enlisted men.⁶ Not only was there a shortage in dressings, splints, and bandages, but the number of litters available was very limited.⁶ After the second day ambulances carried to the collecting points for wounded, litters and other supplies that had been brought up by truck from Paris.⁶ Regimental medical personnel was taxed to its limit to keep the advancing line cleared of the wounded.

Litter bearers worked constantly in the open, under machine-gun and shell fire, and a number of them were killed or wounded.⁷ Every medical organization at the front impressed German prisoners into service as litter bearers; by this means it was possible to keep more of the enlisted men of the Medical Department with the combatant line. There they rendered prompt first-aid service. The number of such men assigned to regiments was inadequate, and, contrary to Field Service Regulations, men of the line in a number of instances carried their wounded comrades toward the rear.⁷

First-aid dressings and bandages and, when advisable, splints were applied at the first point behind the firing line offering comparative protection from fire. As long as a supply was available, strychnine or morphine was administered hypodermically, by means of the Greeley unit tubes, whenever such medication was indicated. Antitetanic serum was not administered until the wounded reached a dressing station or a field hospital. From the first point where they were given attention the wounded unable to walk were carried by litters to the farthest forward location reached by ambulances. In many cases no issue litters were available and improvisations of all kinds were utilized, the most popular of these being made of blouses or ponchos with rifles for side bars. The wounded often had to be kept in the protecting shell holes until after nightfall, on account of the impossibility of transporting them with safety across the shell and bullet swept stretches intervening between them and sheltered points farther toward the rear.⁷ No hot drinks or food were available until the wounded reached the dressing stations, and many men arrived at these points in much worse condition than would have been the case otherwise. During the advance the troops lived on the two days' reserve ration which they had with them when the attack began. As it was impossible for rolling kitchens or water carts to get close enough to the line to supply the troops, the dressing stations had to care for wounded who not only had been exhausted by severe fighting in rain and mud but whose physical resistance had been further lowered by lack of sufficient nourishment.⁸

AMBULANCE COMPANIES

During the march toward Soissons the sanitary train had been removed from the control of the division surgeon, and for some time he was unable to locate it.⁹ Apparently, from some oversight, he had not been consulted regarding the location of Medical Department formations, his first information concerning lines of evacuation and the location of dressing stations coming from G-1 of the French Twentieth Corps.¹⁰ This was verified as soon as communication could be established with G-1 of the 1st Division.¹⁰ The only dressing station established at first was located at Haute-Fontaine, about 9 km. (5.5 miles) in rear of the line of departure, in a barn used also by the French.¹⁰ Nearer the front were stationed a medical officer, a few enlisted men, and a few trucks, but the rapidity of the movement and the promptitude of the attack were such that there had been no time to designate evacuation routes, to post

men, to direct the slightly wounded, or to perform similar duties.¹⁰ Within a few hours after the attack the above-mentioned station was moved to Cœuvres and another was established at Cutry.¹⁰

Ambulance Company No. 2 operated a dressing station at Cutry July 18-19 and there cared for 1,653 patients. On the morning of July 19 the station moved to Dommiers where, in a ruined building, it dressed and evacuated 1,900 patients during the ensuing 36 hours. On July 20 the station again moved forward, this time to Chaudun, about 2 km. (1.2 miles) behind the line, where it remained until July 23, when it was relieved by a medical unit of the 15th Scottish Division. Our station at this point cared for some 1,200 wounded.¹¹

Ambulance Company No. 3 opened a dressing station at 6 a. m. on July 17 in a large cave near Cœuvres and sent 40 men to serve the Infantry as litter bearers, employing its vehicles to evacuate from the advance dressing stations to Field Hospital No. 3, at Mortefontaine, and to Field Hospitals No. 2 and No. 12 at Pierrefonds-les-Bains. The company operated here until July 24, passing 500 patients through its stations and evacuating a much greater number.¹²

Ambulance Company No. 12 established a dressing station July 18 at Cœuvres, but was moved daily as the front advanced, until, when the division was relieved, it was operating in a cave at Missy-aux-Bois. Fourteen hundred and seventy-seven patients passed through the stations of this company.¹³

Ambulance Company No. 13 operated a dressing station at Haute-Fontaine July 18, but the next day moved to Cœuvres, where it operated until July 23. It furnished litter bearers to the 16th and 18th Infantry. While in this sector the company evacuated some 2,000 patients.¹⁴

United States Army Ambulance Section No. 649 supplemented the division ambulance companies, transported the wounded from the various collecting points and dressing stations to the field hospitals, but the number of wounded was so great that despite its assistance ambulances available were insufficient to evacuate the wounded expeditiously. The local representative of the American Red Cross obtained from Paris 40 additional ambulances,¹⁵ which joined on the morning of July 19 and began operations at once. Trucks of the divisional sanitary train, supply train, Red Cross, Salvation Army, and Young Men's Christian Association were also employed to remove the wounded, but though each could carry eight recumbent cases at a time they were too unwieldy and too hard riding to lend themselves satisfactorily to this purpose.⁹ The animal-drawn ambulances with the division proved unsuitable and were not used; the personnel of the company served as litter bearers.¹⁶

At the beginning of this operation 96 men of the sanitary train had been sent to reinforce the Medical Department detachments of the regiments, but the brigade commanders to whom they were reported assigned them, apparently because of immediate needs, in such a manner that some regiments received none, thus necessitating the use of some line troops in those regi-

ments in order to remove the wounded.¹⁶ Casualties among medical officers were so great that it was necessary to call in and assign to regiments all the medical officers on duty with certain noncombatant elements, e. g., the ammunition and supply trains.¹⁶

Even after they had been placed in ambulances the wounded were not out of danger from shells or gas, for the roads were shelled and bombed frequently.⁸ The enemy was thoroughly acquainted with the terrain and its places of possible shelter. "Whether by accident or design, approaches to dressing stations and field hospitals seemed to be the favorite targets. In the spacious caves used as dressing stations (that near Cœuvres could shelter 500 men) the wounded were protected from battle and from weather, and all sounds of battle were excluded. Though patients remained here but a short time, the relaxation they enjoyed for the first time in many days, in quietude, aided greatly in preparing them for the trip to the field hospitals."⁸

FIELD HOSPITALS

Field Hospital No. 12 arrived at Pierrefonds-les-Bains at 6 p. m. on July 17, established itself in an old hotel, and began caring for surgical cases.¹⁷ The location was poor in the extreme, but it was the only place available, as all of the good locations had been occupied by the French.⁹ During the first few days of combat this hospital expanded enormously to include all the neighboring buildings and streets and was augmented by personnel from Field Hospital No. 2, by several surgical teams sent up from the rear, and by X-ray equipment from Mobile Surgical Unit No. 2.¹⁷ The first casualties at this hospital were admitted at about 7 a. m. on July 18, and thereafter it continued to give emergency surgical aid until after the relief of the division, including among its patients some from the Scottish division which relieved our 1st Division.¹⁷ It cared here for 3,385 patients, evacuating to Crepy-en-Valois, whence patients were to be moved by hospital trains.¹⁸

Field Hospital No. 3 proceeded to Mortefontaine at about 11 a. m. on July 18, establishing the next day in tentage a triage hospital, which functioned as such throughout the remainder of the operation.¹⁷ It received and evacuated approximately 5,000 patients,¹⁹ including 3,417 slightly wounded.²⁰ The division surgeon made request of G-1 that Field Hospital No. 3 be ordered to Cœuvres-et-Valsery, but this was disapproved on the ground that the site was too far forward and would be in danger of shell fire. This site was then used for four days as a collecting point.¹⁰ A calculation made after the engagement showed that had the hospital been located there some 6,400 km. (4,000 miles) of ambulance travel over crowded roads would have been saved at a time when ambulances were in great demand.¹⁰ The event showed that the danger from shell fire had been overestimated.

Field Hospital No. 13 was established in tentage on July 18 at Sery-Magneval, where it operated as an improvised evacuation hospital, there being no evacuation hospital at first in rear of the division. It remained in this location throughout the operation, relaying patients to French hospitals at

Senlis and Chantilly and to hospital trains at Crepy-en-Valois, until this service was taken over by Evacuation Hospital No. 5 on July 20.¹⁷ It received, among others, 2,987 slightly wounded patients.²⁰

Field Hospital No. 2 did not function as a unit. Part of the personnel supplemented Field Hospital No. 12 at Pierrefonds-les-Bains. The remainder of this hospital was inactive, with skeletonized personnel at Trumilly.¹⁷

The field hospitals not only admitted the wounded of the 1st Division but also some patients from the 2d Division, as well as others from French, British, and Moroccan divisions and some disabled German prisoners. Throughout the operation the field hospitals supplied hot food and hot coffee day and night to men who had become separated from their commands, including some who through ignorance of troop movements had remained after the division had withdrawn, as well as to many military wayfarers.²¹

EVACUATION

Evacuation was operated under very serious handicaps, viz, large numbers of wounded; roads enormously congested, frequently blocked completely for hours by the great amount of forward-moving traffic, especially of ammunition and artillery; very long evacuation routes, for the divisional evacuation service extended from the battle front to Senlis and Chantilly, 55 km. (34 miles) to the rear.²² Three wounded transport circuits were established: (1) Front, (2) rear, and (3) evacuation.²² The front circuit of all the Ford and many of the G. M. C. ambulances, regulated from the dressing stations, extended as far forward as traffic, terrain, and combat conditions permitted and evacuated to the dressing stations and to the triage at Mortefontaine.²² Great difficulty was experienced in making this circuit adequate and in getting ambulances to battalion aid stations, on account of the congestion of forward roads. All available ambulances, including those of United States Army Ambulance Section No. 649, were placed on this circuit to clear the field of wounded.²² Dressing stations were very active in making emergency dressings and in relaying patients to the rear.²²

At Mortefontaine patients were triaged, given emergency treatment, and evacuated to the rear circuit. Seriously wounded were sent to Field Hospital No. 12 at Pierrefonds-les-Bains by G. M. C. ambulances, and all others to Field Hospital No. 13 at Sery-Magneval by trucks.²² Very few ambulances could be spared for this rear circuit. Animal-drawn ambulances, useless in front circuit, were used in the rear circuit to help evacuate patients from Mortefontaine.²²

At Pierrefonds-les-Bains several surgical teams operated, providing emergency aid to the seriously wounded. From there all who could be moved and for whom transportation could be found were evacuated to Sery-Magneval, where they were received at first by Field Hospital No. 13 and later by Evacuation Hospital No. 5.²²

From Sery-Magneval an evacuation circuit became necessary. This was made up chiefly of field hospital trucks. Patients were sent to the French evacuation hospitals at Senlis and Chantilly, which also soon became over-

crowded.²² About July 20 patients began to be sent from Sery-Magneval to Crepy-en-Valois, whence they were moved by hospital train. On July 19 several sections of Red Cross ambulances (Fords) were attached to the ambulance section at Mortefontaine, whose headquarters were located with Field Hospital No. 3 and were used on both front and rear circuits, releasing some heavy ambulances from the rear and evacuation circuits.²²

Evacuation in the early part of this operation was exceedingly difficult and beset with hardships. There was no American evacuation service in operation behind the division to relieve divisional units of patients and to permit the divisional medical service to confine its activities to the divisional area, which by itself was an enormous responsibility. For this reason all field hospitals rapidly became overcrowded, with no means or place for their evacuation. The French hospitals at Senlis and Chantilly had been designated by the French high command as evacuation points for the 1st Division, but these were very far in the rear and soon were unable to receive more patients.²³

Before the engagement the French had assured the division surgeon, 1st Division, that they would evacuate the field hospitals, and that American divisions would be expected to do only what is prescribed for divisional service by our regulations, viz, work within the division, but as the wounded accumulated it became evident that our field hospitals could not be cleared under this arrangement.²⁴

The 1st Division therefore moved many patients to Senlis, a distance of 90 km. (55.8 miles), and cared for the remainder to the extent of its limited resources, until the French brought up hospital trains and moved patients to Paris.²⁴

On July 20 the division surgeon was informed by the French corps surgeon that he was to evacuate all his wounded to Crepy-en-Valois, where there would be ample hospital train service to care for them.¹⁵ This was done, but several days later it was learned that hospital trains had not arrived there and that the wounded had received little attention.¹⁵ As soon as American headquarters had located the division, several operating teams arrived and rendered great service. Many patients had been at the field hospitals two days and were urgently in need of surgical attention.¹⁵

So far as the division surgeon could ascertain no wounded remained upon the field or in the dressing stations more than six or eight hours. When the division was relieved there were no wounded on the field or in the dressing stations, for evacuation from the front had been carried on with vigor, but in field hospitals patients were compelled to remain 48 hours, as for a time there was no adequate means of evacuating these units.²⁵ Evacuation Hospital No. 5, which began to function at Sery-Magneval on July 20, relieved this situation, as described later.

MEDICAL SUPPLIES

This engagement brought out the fact that a division conducting active field operations required very considerable quantities of medical supplies, much greater indeed than had been anticipated.

As the 1st Division had been engaged in trench warfare and in consequence had abandoned its standard field medical equipment or had replaced it with that suitable for use in the trenches, it proved to be inadequately equipped for this operation. It went into action with about 600 litters and the usual number of blankets, but in five or six hours the supply was exhausted.²⁴ Taking several trucks, the medical supply officer hurriedly visited Senlis, Neuilly, and Paris, and in three days obtained and delivered at least 3,000 litters and as many blankets, but even these proved insufficient, for as evacuation from the field hospitals was retarded and they were overcrowded they were obliged to use litters as beds.²⁴ Because of the military situation no telegrams designating location were permitted, and as the medical representative of the American general staff, who was charged with supervision of the medical service of the divisions in the Marne area and with supply and evacuation in rear of them, had not been informed (in the interests of military service) of the location to which the 1st and 2d Divisions had so suddenly been moved, his services in both these capacities were for a time unavailable. Consequently wounded accumulated in the field hospitals and required more matériel for their service than they otherwise would have needed. The local representative of the Red Cross went to Paris as soon as the need of supplies became evident, and on the night of July 18 returned with several truck loads of matériel, including much-needed dressings.²⁴ He also notified the officers of the Paris group of the division's location, thus permitting them to effect evacuation and to supplement its Medical Department personnel.¹⁵

The division medical supply unit was located at Pierrefonds-les-Bains, with an advance unit at Mortefontaine.²³

When the 1st Division was relieved its medical personnel had been working continuously for five days, but when it was learned that the Scottish division effecting its relief had but eight ambulances the 1st Division ambulance companies all volunteered to remain and assist in evacuation of its wounded.²⁵ The divisional artillery also remained to assist in the Scottish division's attack. The helpful service of the Medical Department was acknowledged by the commander of the latter division, who wrote in part as follows:²⁵ "Without the help of Colonel Mabee and his establishment of ambulance cars I have no hesitation in saying that at least 400 of our wounded would still be on our hands in this area."

THE 2D DIVISION

The 2d Division, with the American 1st and the Moroccan 1st Divisions, made the main attack from the west, south of Soissons. As was the case with the other divisions in this operation, there was no artillery preparation, this being a surprise attack.²⁶ The division advanced 8 km. (4.9 miles) in 26 hours, captured the powerfully organized positions of Beaurepaire Ferme, Vauxcastille, and Vierzy, and by the close of the second day was facing Tigny. On the night of July 19-20 the division, less its artillery, was relieved by the French and withdrew to an assembly area near Pierrefonds.

The divisional artillery supported the French until July 25, when it also was relieved.²⁶

The following extracts from the report of operations of the 2d Division describe its activities in this offensive in greater detail as follows:²⁷

On the morning of the 17th of July the troops debussed in the vicinity of Pierrefonds, Retheuil, and Taillefontaine. Division headquarters was established at Carrefour de Nemours (2½ miles north of Villers-Cotterets). It then became known that the 2d Division was to participate in a surprise attack. * * * In the attack, the 1st Division (French) Moroccan was placed between the 1st and 2d United States Divisions. * * * The three objectives for the division were generally marked by a north-and-south line through Beaurepaire Ferme, the ravine east of Vauxcastille, and the eastern edge of Vierzy. * * *

The attack was made by the following troops in line from right to left: 23d Infantry, 9th Infantry, 5th Marines. The 6th Marines were corps reserve. The direction of the attack to the first objective was generally northeast. Then its course turned to the southeast. * * *

The surprise was a complete success and by 1 p. m. most of the third objective had been taken. The town of Vierzy was not taken until later in the day. Another attack late in the evening carried forward the line to a point about 1 km. east of Vierzy.

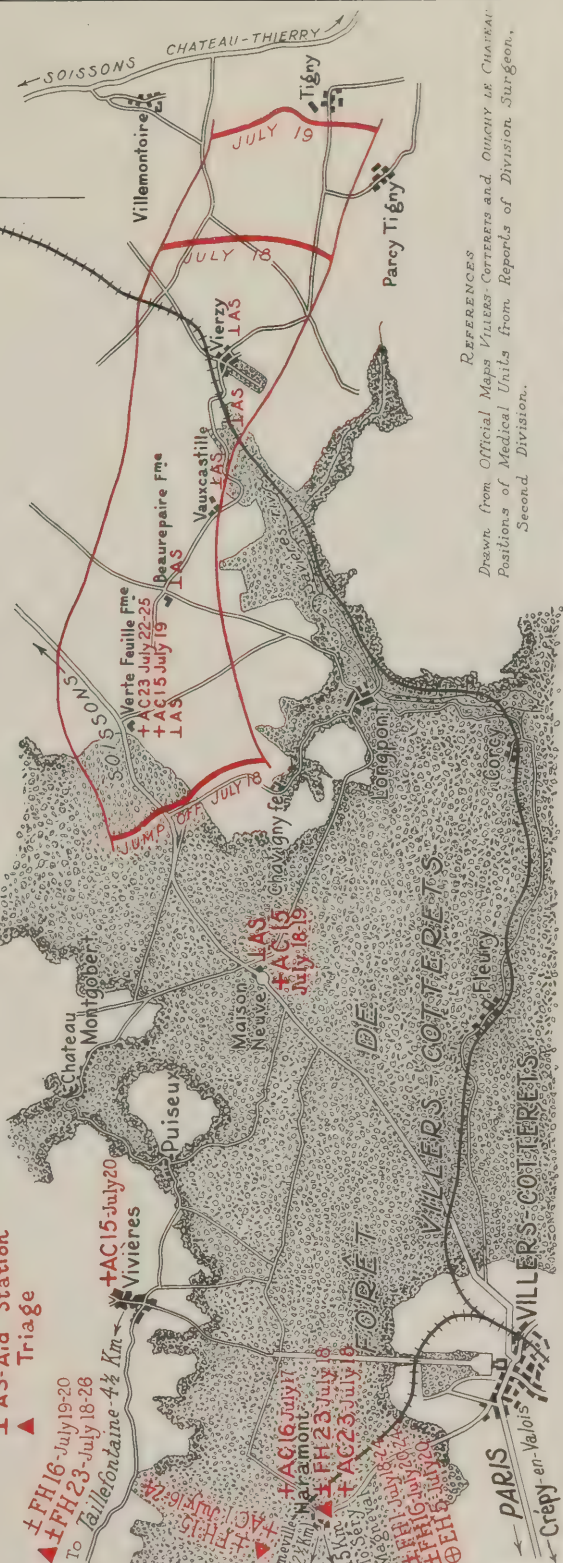
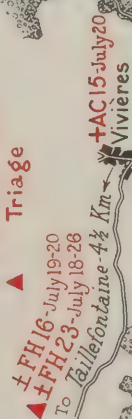
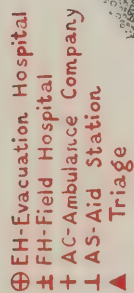
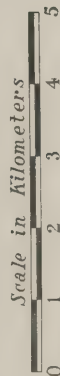
Early on the morning of the 19th the 6th Marines passed through the front east of Vierzy and occupied the line running just west of Villemontroire and Tigny. The regiment had been in reserve until now, its advance from Beaurepaire Ferme to the "jumping off" line east of Vierzy was under hostile shell fire. * * * Many casualties were suffered before the front lines were reached. * * * This attack caused 40 per cent of losses.

The division was relieved from the front lines on the night of July 19-20 and then moved back to the forest, where they had jumped off on the 18th; thence was marched back to a new area for billeting.

MEDICAL DEPARTMENT ACTIVITIES

During the night of July 17-18 battalion aid stations were set up very near the enemy's trenches, in one case within 50 yards. Regimental aid stations were slightly farther back, some at Maison Neuve and others in the forest.²⁸ Locations were the most suitable that could be found near positions assigned the troops at the line of departure, but reconnaissance was imperfect because of darkness, rain, mud, and road congestion.²⁹ The attack advanced so rapidly that thereafter no battalion aid station, definitely organized as such, could be established, but collecting points for the wounded were designated at the various crossroads, in buildings, and at other points which afforded some shelter.²⁹ These, in the order of advance, were at Maison Neuve, Verte Feuille Ferme, Beaurepaire Ferme, Vauxcastille, and, finally, in the late afternoon, Vierzy, which, on the 19th, became a concentration point for the battalion and regimental aid stations of practically all the division except the Artillery.²⁹ Some battalion aid stations were also farther forward in the field wherever there was any protection.²⁹ At this time the Artillery had aid stations in Vauxcastille and along the railroad between Longpont and Vierzy.²⁹ The latter town was badly shelled a great deal of the time, but numerous large caves and the stone quarries there gave absolute protection. On July 19 many

JULY 17-20, 1918.



REFERENCES
 Drawn from Official Maps VILLES-CORREETS and OULCHY LE CHATEL.
 Positions of Medical Units from Reports of Division Surgeon,
 Second Division.

Battle lines, taken from existing orders and maps, are approximate.

gas shells were poured into the town, which, because of encircling hills, became a veritable gas pocket, thus hampering greatly the work of the medical personnel.²⁸

SANITARY TRAIN

Field Hospital No. 15, a detachment from Ambulance Company No. 1 of 1 officer, 36 litter bearers, and 4 ambulances had accompanied the Artillery brigade, which began its movement into the sector on the night of July 14-15.²⁹ One-half the personnel of Field Hospital No. 16 remained at Jouarre, where it cared for the divisional sick in a convent previously used by the French as a military hospital. The remainder of the sanitary train started on the evening of July 16 for an all-night ride to Bonneuil-en-Valois, Oise, arriving on the morning of the 17th.³⁰

The transportation section of the 16th Ambulance Company (animal drawn) arrived in the area on July 17, except the dismounted members of the company, who, overlooked in the distribution of trucks, proceeded by rail and rejoined the other sections on the 19th at a point in the forest one-half kilometer (0.31 mile) west of Haramont.²⁹

Contact with the French corps surgeon could not be made until night of July 17, and the only instructions then given by him to the division surgeon were that a field hospital be established as a triage at Taillefontaine and that one be located at Sery-Magneval to reinforce the French hospital there. Owing to traffic congestion these instructions could not be carried out until the next morning.²⁹ At 9 p. m., July 17, orders were received for the location of ambulances and dressing stations, but on account of the great amount of traffic the detachments concerned were unable to reach their destinations until the following morning.²⁹

AMBULANCE COMPANIES

Ambulance Company No. 1 sent 3 ambulances to the 23d Infantry, 3 to the 9th Infantry, 1 to the 5th Marines, and 7 to Field Hospital No. 23 at Haramont. Because of road conditions, the ambulance ordered to serve the marines did not reach its destination until noon of the following day, though the distance traveled was only 20 km. (12.4 miles).²⁹

Ambulance Company No. 15, with personnel and equipment for two dressing stations, was ordered to establish them on the Montgobert—Longpont road, north and south, respectively, of the main road between Soissons and Villers-Cotterets. Though the distance to be traveled was but 18 km. (11.1 miles) the unit did not reach its destination until 7 a. m. on July 18. As wounded came through these points, the company established a dressing station at Maison Neuve, the crossroads of the highways mentioned, where wounded were beginning to collect and where Infantry regimental surgeons were gathered. This became the main dressing station. At 3 p. m., on July 19, Ambulance Company No. 15 established an advance station at Verte Feuille Ferme, but this was soon closed and the detachment returned that night.²⁹ On the following day the unit moved to Vivieres.³¹

Ambulance Company No. 16 established a station at its assembly point one-half km. (0.31 mile) west of Haramont, but only 75 wounded were received.²⁹

Ambulance Company No. 23 sent three ambulances to Field Hospital No. 23, at Haramont.²⁹

At 4 a. m. on July 18 all available ambulances and litter bearers were sent forward, but as the former were soon blocked on the congested roads the latter proceeded on foot. On the same date all the ambulance companies (with the exception of the 15th) moved their headquarters to Taillefontaine, where they remained until withdrawn from the sector.²⁹

Evacuation was very difficult, for the sanitary train arrived in the area with depleted transportation. Only 32 serviceable G. M. C. ambulances and 21 trucks were available in the train at this time, and these were not supplemented by any United States Army ambulance sections. During the 18th the greater part of the evacuations were made by ambulances, sanitary-train trucks, and returning ammunition trucks. On the following day all these, and supply-train trucks as well, were used for evacuating the wounded. On the latter date French troops relieving the division provided five Ford ambulances, but only one trip was made with these.²⁹

Two other circumstances conspired to aggravate evacuation difficulties, viz, road conditions and the necessity for evacuating field hospitals by divisional transport. The Soissons—Villers—Cotterets road—a very narrow, paved highway, with borders of soft mud—was noted on commercial road maps as “impracticable for autos.” Innumerable trucks “skidded” into the ditches and had to be pulled out by tanks. Traffic moved either at snail’s pace or was stopped completely, until, on the 19th, military police were charged with its control. After that date blocking of the road was practically eliminated.²⁸

As provision for the prompt removal of the wounded from field hospitals by other than divisional transport did not meet requirements, divisional transportation had to be used to clear these hospitals to the rear. This situation required that trips from 20 to 34 km. (12.4–21.1 miles) in length be made, until, on July 20, Evacuation Hospital No. 5 was established at Sery-Magneval. Despite all difficulties, battalion aid stations had all been cleared at 2 a. m. on July 20.²⁹

On July 22 the division having been withdrawn, a detachment from Ambulance Company No. 23 was assigned to the 2d Artillery Brigade, which was to remain in line. This detachment consisted of three officers, a dressing-station party, and four ambulances. An ambulance dressing station was established at Verte Feuille Ferme and operated there until July 25, when it was withdrawn with the Artillery. During these three days it cared for many wounded men, mostly from the Scottish and British troops sent into line to relieve the 1st Division.²⁹

FIELD HOSPITALS

Field Hospital No. 1 had been ordered to Haramont, but after finding, on the 18th, a suitable location and beginning to open up, it was ordered to Sery-

Magneval, where it arrived at 2.30 p. m. and immediately set up tentage. It functioned as an evacuation hospital for the division and operated on non-transportable cases, but was unable to care for all of these, its overflow being received by French hospitals at this place and at Crepy-en-Valois. When the hospital left this location on July 24 it had cared for 200 gassed patients, 1,034 wounded, 45 psychoneurotic cases, and 81 injured, a total of 1,360.²⁹

Field Hospital No. 23 reached Haramont at 7 a. m. on the 18th, having been delayed all night on the road, though it had had a march of only 5 km. (3.1 miles). Here it operated a sorting station until noon of the same date, then moving to Taillefontaine, where it reestablished its triage and cared for patients until they could be removed. Facilities were limited; one small building was used for dressing purposes and another for gassed cases. After being treated, patients were cared for in tents or on litters in the open. Assisted by personnel from Field Hospital No. 16, the unit here cared for 75 gassed cases, 966 wounded, 13 psychoneurotics, 12 injured, and 180 sick, a total of 1,246 patients. When the division moved to this sector the other half of Field Hospital No. 16 had been left, as noted above, at Jouarre to care for divisional sick left behind in the sector formerly occupied.²⁹

Field Hospital No. 15, which had arrived in this area on July 16 with the Artillery, moved to a point in Bois de Brassois, near the crossroads 1½ km. (0.93 mile) north of Eméville, where, until, July 24, it operated a sorting station. It treated 607 patients, including 48 gassed, 369 wounded, 7 psychoneuroses, 31 injured, and 152 sick.²⁹

On July 20 all forward field hospitals were cleared and all ambulances and Sanitary Train trucks sent to Sery-Magneval, where Field Hospital No. 1 was cleared as rapidly as hospital trains could evacuate it. Here Evacuation Hospital No. 5 also was cleared by ambulances and trucks of the division during the following two days, as was also the 1st Division field hospital operating at the same place. Ambulances of the 2d Division likewise assisted in evacuating great numbers of French wounded from the French hospital there.²⁹

As noted elsewhere, the Medical Department representative of the general staff who was charged with evacuations from the divisions in the Marne areas had received no information of the intended attack toward Soissons and for military reasons the division surgeon was not permitted (until after the attack developed) to telegraph him concerning the need for an evacuation hospital and for operating teams.²⁹ The division surgeon had been assured by the French that they would evacuate American wounded from the division and provide evacuation hospital facilities for them. This service included the evacuation hospitals at Pierrefonds-les-Bains, Sery-Magneval and Crepy-en-Valois, but during the first days these hospitals were filled to overflowing and so were unable to admit more patients. French evacuation hospitals were located also at the following points: Senlis, for all classes of cases; Chantilly, for slightly wounded; Ognon, for fracture cases.²⁹ Some patients were admitted to these hospitals but soon, because of the needs of their own wounded, further admissions were refused, and this difficult extra trip of from 22 to 34 km. (13.6–21 miles) from Field Hospital No. 1—the

evacuation hospital of the 2d Division—and return was made to no purpose. Owing to the fact that preference on the railroads was given to ammunition and supplies, the arrival of French hospital trains was delayed many hours. Shelter being insufficient, many wounded men, mostly belonging to the 1st and 2d Divisions, were left for hours in the railroad yards at Crepy-en-Valois, where they had been sent from overfilled French hospitals. Upon arrival of Evacuation Hospital No. 5, on July 20, the situation was immediately relieved.²⁹

MEDICAL SUPPLY UNIT

The divisional medical supply unit remained at La Ferte-sous-Jouarre, but during the night of July 17 sent up two sanitary-train trucks with litters, blankets, gauze, cotton, bandages, etc., which had been previously loaded and were awaiting orders. On July 19, the division surgeon asked for 500 litters, 500 blankets, Thomas splints, etc. The message was telegraphed to the medical supply depot at Lieusaint, and supplies were delivered at La Ferte-sous-Jouarre at 3 a. m. on the 20th.²⁹ They were forwarded at once and reached Taillefontaine at 11 a. m. on the same day. Though too late to be of service to the 2d Division, they were of great value to the 1st Division, to which they were delivered.²⁹

MEDICAL DEPARTMENT SERVICE IN REAR OF THE DIVISIONS

One or more representatives of the medical group attached to the fourth section of the general staff, G. H. Q., A. E. F., was constantly in the field during the more important operations on the Marne, submitting recommendations for coordination by the general staff, and at times actively directing the operations of the medical service at the front. The Medical Department representative of the general staff previously sent to the Chateau-Thierry front acted as and was later assigned as chief surgeon of the "Paris group." The chief surgeon of the Paris group was in general charge of Medical Department activities in this area.³²

Such great secrecy had been maintained concerning the offensive toward Soissons that no information regarding it had been given the acting assistant chief of staff, G-4, of the Paris group, under whom functioned the medical service charged with evacuation of the disabled from the divisions, medical supply, assignment of evacuation hospitals, and operating teams and related duties.³³ In point of fact, since American troops were operating in this offensive as a part of a French corps, were under its tactical command, and the latter had assumed responsibility for the removal of wounded, this group was supposed to have no official duty in the matter.³³ Nevertheless the Medical Department felt that an obligation existed and feared that hospitalization which the French could provide would be inadequate. Such, in fact, proved to be the case, and as soon as the division's location was ascertained, relief was expedited. Concerning this episode the medical group operating under G-4, G. H. Q., reported as follows:³⁴

Divisions were hurriedly withdrawn from one part of the line and thrown into another alongside the French without advance notice to the medical representatives in the

field and at times evidently without due notice being furnished the tactical headquarters of the Paris group, then established at La Ferte-sous-Jouarre, under which title all American divisions operating in that region functioned. This condition of affairs created a situation on the Soissons front that evoked considerable unjustifiable criticism of the Medical Department. The 1st and 2d Divisions were thrown into battle there without advising the American headquarters, and as we had no hospitalization established in that sector the heavy casualties sustained were not promptly or well cared for. As it developed, moreover, the French were no better prepared to meet the hospitalization obligations that this new situation imposed upon them. This incident was regrettable in that we had, packed and available for quick transportation, a mobile and an evacuation hospital to meet an emergency of this nature. Had we been given notice of this impending tactical change we could have established hospitalization of our own behind the troops engaged on the Soissons front. The French Medical Department was greatly embarrassed by the large number of wounded that flowed into their organizations from our two divisions engaged there, and while the responsibility for the care of our sick and wounded devolved upon them, events showed that they were woefully unprepared to receive them. The evacuation of our own men from that sector was eventually carried out under direction of our G-4 representative, on our own trains hurriedly sent up on his call.

In all fairness it should be added that the great loss of beds in evacuation hospitals—some 40,000 or 45,000³⁵—which the French had recently suffered during the German advance in this area, prevented their giving the assistance promised. Also, their tactical officers maintained that the movement of an evacuation hospital and other medical formations to a prescribed destination would have jeopardized the success of a very important military operation.³⁶

The following description of the efforts of the chief surgeon, Paris group, to meet this emergency is abstracted from his report. His representative had left headquarters on the afternoon of the 17th of July, instructed to select sites for evacuation hospitals to serve the 1st and 2d Divisions in the Dammartin area, where it was understood that they were to be located.³⁷ The regulating officer at Le Bourget informed the chief surgeon by telephone that these divisions had been removed from Dammartin on the preceding night and placed in the line south of Soissons for an offensive which had occurred on the morning of the 18th. He stated that losses had been heavy but could give no figures. The chief surgeon, Paris group, then requested a medical officer from General Headquarters, who was inspecting the area informally, not to return to General Headquarters until early the next morning, it being probable that he would wish the latter to go to Soissons to take charge of the situation there. Early on the morning of the 19th, it being impossible for the chief surgeon to leave, he assumed authority to direct this officer to proceed with all haste to the vicinity of Soissons, take such steps as might be necessary to meet the needs there existing, and to acquaint him, the chief surgeon, by telephone, telegram, or special delivery, with the situation. The officer so assigned left at once.³⁸ The chief surgeon then called up the regulating officer at Le Bourget and asked him to inquire of the French railroad authorities as to the nearest point to Soissons where a hospital train could be "spotted."³⁹ About noon of that day the latter reported that hospital trains could go no nearer Soissons than Crepy-en-Valois, and a little

later that day the assistant to the chief surgeon above mentioned reported that he had covered the ground on the west flank, that Crepy-en-Valois was the best location for an evacuation hospital, and that the French were caring for American wounded at Senlis, Chantilly, and Ognon.³⁹ Accordingly, Evacuation Hospital No. 5 was routed through to Crepy-en-Valois and its early delivery urged.³⁹ The American Red Cross, learning of this offensive, had hurriedly sent officers, nurses, and enlisted men from Paris and from American Red Cross Hospital No. 104 at Beauvais to the ambulance St. Paul which it was conducting at Chantilly where it established an evacuation hospital. It also rushed supplies here for a 300-bed hospital which was soon expanded to 400 beds.⁴⁰

About 1 o'clock on the morning of July 20, the representative whom the chief surgeon had sent to reconnoiter the situation in the vicinity of Soissons returned and reported a deplorable state of affairs. He estimated casualties at 10,000, but gave these figures with uncertainty. The French were transporting the wounded to Senlis and Chantilly, and a few were drifting into Juilly. Reliance had been placed entirely upon hospitals already established; and though roads were poor and terrain rough and difficult, no hospitalization had been provided by the French at any convenient point. This officer reported evacuation service as most unsatisfactory, many wounded yet remaining at the front. Shortage of transportation, difficult terrain and lack of roads all contributed to the existing chaos. He had not seen the hospitals at Senlis and Chantilly, but had heard that they were overcrowded and utterly unable to meet the situation.³⁹ He was directed to return at once and establish Evacuation Hospital No. 5 at Crepy-en-Valois (the regulating officer having reported to the chief surgeon that it would arrive during the night), and was authorized to take such action as he might deem necessary. He was to order hospital trains direct from the regulating officer, and, for the time being, to send all preoperative cases to Paris for operation. He returned immediately to carry out these instructions.⁴¹

Without delay the chief surgeon, Paris group, telephoned the regulating officer requesting him to send two trains to Crepy-en-Valois with all possible speed and to be prepared to send additional trains when called for. About 6 a. m. six surgical teams which arrived by automobile from the vicinity of Chaumont were sent forward in the same car to Crepy-en-Valois, and, upon arrival there, were directed to report to the chief surgeon's representative. The personnel of Field Hospital No. 120, which had arrived in compliance with the chief surgeon's request, were sent immediately to the same destination.⁴¹ One United States Army ambulance section, also ordered to Crepy-en-Valois under the same instructions, promptly left the area but was intercepted by the French and not allowed to proceed. It was some 24 hours later before the chief surgeon learned that this ambulance section had not reported at Crepy-en-Valois, and upon being informed of its hold-up he registered an official complaint through the French liaison officer on duty with headquarters, Paris group. Evacuation Hospital No. 5 reached Crepy-en-Valois at 10 a. m. on July 20, then moving to Sery-Magneval, about 5

km. (3.1 miles) distant.⁴¹ The site proved to be a vacant field of 10 or 15 acres, adjacent to a French mobile hospital.⁴² Field Hospital No. 13, 1st Division, was also in operation near the same place. The site was poor and surroundings very insanitary.⁴²

After some delay in obtaining truck transportation to carry the equipment of Evacuation Hospital No. 5 (some of this transportation was loaned by the French) the first of its property arrived at the camp site at 3 p. m. During the afternoon the work of establishing the hospital went on actively. In the midst of tent pitching the surgeon of the Third Corps came to the camp and importuned the commanding officer to detail 10 officers and 30 enlisted men to care for some three or four hundred wounded who were reported to be lying uncared for on the other side of the railway track. Four officers and ten men were detailed for this duty, with orders to remain with these wounded until they had been properly cared for.⁴²

By 9 p. m. of July 20 the hospital was functioning, its surgical staff was at work, and the portable electric-light plant working satisfactorily. This light plant, with the X-ray apparatus, proved of inestimable value. Hardly had the work begun when appeal was made for shelter for 200 wounded men then at the railhead. These wounded—actually about 400—were waiting for a hospital train which failed to arrive. All night wounded men were coming in, and the surgical staff worked without a pause until noon of the next day, when a number of operating teams began to arrive.⁴² During the night 477 wounded were formally received, cared for, and sheltered. They were evacuated the next morning. Admissions were reported as follows: Gassed patients, 253; medical, 302; surgical, 2,071; total, 2,626. The chief surgeon, First Army, reported that though the hospital arrived too late to be of much service to our troops, "it was a veritable godsend to British and Scottish divisions which came in to relieve the American troops in such haste that their sanitary trains were left far behind."⁴² On August 1 the hospital left by truck train for La Ferte Milon, Aisne.⁴²

The Soissons experience led to the following letter from the chief surgeon of the Paris group to the assistant chief of staff, Paris group: ⁴³

OFFICE CHIEF SURGEON, PARIS GROUP,

22 July, 18.

From: Chief surgeon, Paris group.

To: A. C. of S., Paris group.

Subject: Medical Department operations.

1. It is known to you that the 1st and 2d Divisions were withdrawn from the front lines and placed in rest near Dammartin. After entering the rest area they were suddenly moved northward by the French to the vicinity of Soissons, and without warning to this office quickly thrust into a line back of which we had no hospitalization. Under such circumstances the French, of course, always hospitalize and care for our wounded, but events have proved that they were, in this case, unprepared to do this, and as a result there has been much suffering and probably deaths. Such hospitalization as the French had at their disposal has been as open to the Americans as to the French themselves, but the amount in the Soissons vicinity was utterly inadequate to meet the needs, and we had no opportunity to better the situation.

2. This office was in a position to supply hospitalization, and had it been notified of the contemplated movement northward much suffering that has occurred might easily have been prevented. In view of this incident, this office wishes to recommend that the chief surgeon of the Paris group be kept informed of contemplated troop activities, which step it is thought will prevent repetitions of this unfortunate occurrence.

PAUL C. HUTTON,
Col. M. C., N. A.

As a result of this letter and the experience of the 32d Division at Juvigny, the commander in chief, on August 31, addressed the following note to the French Mission:⁴⁴

GHQ, AEF, 4TH SEC., G. S.
31 August, 1918.

From: C. in C.

To: Chief of French mission.

Subject: Hospitalization and evacuation of American sick and wounded.

I. Every effort is now being made by the A. E. F. to so organize and distribute its Medical Department personnel and equipment as to assure that adequate hospitalization and evacuation facilities will be provided for the sick and wounded, wherever and irrespective of the conditions under which they may be called upon to serve.

II. In the past the French have kindly shared with us all their resources, even when the aid extended has resulted in some embarrassment to their own service. We feel deeply grateful for the assistance so rendered. However, owing to the difference in language and the consequent difficulties encountered by our soldiers in making their wants known when hospitalized in French formations, it becomes desirable and necessary that as far as possible we provide them the necessary hospital accommodations in our own units.

III. Therefore, in view of existing agreements and customs which are more or less in conflict with the propositions below set forth, it is requested that this matter be given favorable consideration by the French, to the end that whenever American divisions are detached for combat purposes with the French Army the following principles shall be mutually recognized:

1. That the American Medical Department is authorized to establish its own hospitalization behind any of the divisions serving with the French and direct or assist in, according to circumstances, the evacuation of A. E. F. wounded.

2. That the French, in devising their tactical plans for a battle in which they expect to utilize the services of American divisions, designate and communicate to proper American officials, for the information of the American Medical Department, suitable sites for at least two American evacuation hospitals for each American division operating with the French.

3. That the French arrange details necessary to permit access of American hospital trains to any American evacuation hospitals so established.

4. That the French furnish timely information to the immediate headquarters of the American army, corps, or "group" from which a division or divisions are detached for service with the French, as to the contemplated use and movements of these divisions while they remain under French control, in order that the A. E. F. Medical Department may make preparations necessary for the hospitalization and evacuation of American wounded, and in case the A. E. F. is not in a position to provide the necessary facilities to furnish proper notification to that effect to the French.

IV. In connection with Section III, paragraph 4, above, the recent activities of the 32d American Division^c are cited as an example of the necessity for this information. This division, forming part of the Third American Corps, was suddenly detached from the Vesle sector and assigned to the Tenth French Army for combat purposes on the Soissons sector. The chief surgeon (American) of the "Paris group," with headquarters at La Ferte-sous-Jouarre, who is directly charged with the provision of proper hospitalization

^c This occurred after Soissons; it is discussed later.

and evacuation for A. E. F. troops in that region, had no information as to the movements of this division upon which he could act intelligently in the matter of locating sanitary units for their care. Immediately upon the departure of the division he ordered a mobile (tent) evacuation hospital to pack, proceed, and reestablish somewhere in the rear of the line this division might occupy. In the absence of authoritative information the location selected was a mere matter of guesswork on his part. However, as events have proven, his selection, due to good fortune more than anything else, resulted happily. It appears that there are times when even the French medical service is not informed as to the advent, for combat purposes, of American divisions in their midst, and consequently has not been in a position to meet the additional hospitalization and evacuation problem thrust upon them by tactical commanders.

By direction.

GEO. VAN HORN MOSELEY,
Brigadier General, G. S.,
Asst. Chief of Staff, G-4.

The French acceded to these requests and complied with them after the attack of the 32d Division against Juvigny. From this time the care and evacuation of our wounded in rear of the divisions moved very smoothly, though our Medical Department continued to be greatly embarrassed by the great shortage of personnel and of evacuation hospitals. In this connection it should be noted that though the American Expeditionary Forces shortly thereafter were largely concentrated in our own sector, a number of our divisions continued to operate exclusively with our Allies.

On July 22 the chief surgeon, district of Paris, reported that his hospitals in Paris were full and that he was unable to obtain trains for their evacuation. At the same time the regulating officer at Le Bourget reported that he had heard from Crepy-en-Valois that there were 1,000 patients there to be evacuated and cared for.⁴⁵ Though trains were very scarce, it appeared that the situation could be met within 48 hours. Hospital trains again being made available on the 24th, Crepy-en-Valois was entirely cleared except for a few nontransportable cases. Many American wounded had been evacuated on truck trains, but the French hospitals at Senlis, Chantilly, and Ognon were still filled to overflowing with our wounded.⁴⁶

On July 29 figures were received from the railway transport office which showed that 10,578 patients from the 1st and 2d Divisions had been moved by train principally from Crepy-en-Valois and Senlis, together with some 200 wounded prisoners.⁴⁷ These figures did not take cognizance of nontransportable cases still in French hospitals.⁴⁷ Of the number mentioned, 3,393 had been evacuated in American trains and 6,792 in French trains.⁴⁶

The Medical Department of the Third Corps was in a peculiar situation in this operation as that corps at the time did not have tactical command. The corps headquarters staff had officially the status of "observers,"⁴⁸ but concerning its activities here the corps surgeon wrote as follows:⁴⁹

Although the official entry of the 3d Army Corps into battle is given in the reports as August 3, 1918, the days immediately following July 18 were among the most stirring in the career of the organization. Whether the staff officers of the 3d Corps were observers or administrators or tactical advisers has never been quite clear, but certainly the part they played was active. * * *

Efforts made by the corps surgeon to ameliorate the situation in rear of the 1st and 2d Divisions will now be described.

While the 1st and 2d Divisions were at this time under administrative control of the American Third Corps, though under tactical command of the French, the corps surgeon endeavored to learn from the officer in charge of G-1 of the corps what was the general scheme of evacuation, believing, because of his experience with the dissimilar American and French systems, that he could promote their coordination. He was informed, however, that the scheme of evacuation was a military secret which G-1 would not divulge.⁵⁰ The corps surgeon then visited a number of points in the evacuation area of the 1st Division, and on July 19, learning that additional personnel was badly needed by the divisional hospital at Pierrefonds-les-Bains, succeeded in having members of the corps headquarters troops sent to its relief.⁵¹ Two hours later he reported this congestion of field hospital to G-1 of the corps and recommended that the Paris group be advised of the situation and that ambulances and personnel be requested. He then visited corps headquarters and reported to the chief of staff the situation concerning the wounded. The officer commanding the United States Army Ambulance Service arrived in response to a message sent him and provided additional ambulances.⁵² Operating teams, also, were arriving. On July 20, the corps surgeon visited the surgeon of the French Tenth Army and was told that representatives of the French Corps had conferred with the surgeons of both the 1st and the 2d Divisions and had described the French system of evacuation.⁵² It was understood in his office that the surgeon from the 1st Division had undertaken to evacuate back of Pierrefonds-les-Bains to Sery-Magneval, but from Sery-Magneval it was acknowledged that the French plan was to evacuate to Senlis; by ambulance for the seriously wounded, by trucks for the slightly wounded, and by trains from Crepy-en-Valois.⁵² The surgeon of the French group of hospitals from Crepy-en-Valois received orders for French personnel to attend to the entrainment at Crepy-en-Valois.⁵² The French medical officer in the office of the medical representative of the general staff was of the opinion that neither side was familiar with the system of the other and that American division surgeons had arrived too late for effective work;⁵² that the French system of classification was not followed, that no one had asked the French for help on July 18 and 19, and that if his help had been asked for it could have been furnished.⁵²

At Crepy-en-Valois, where the surgeon of the Third Corps had been told that there was French personnel to attend to entrainment, he found about 250 wounded American soldiers on litters, exposed to wind and dust, and without personnel except one medical officer, some line officers, and other volunteers in attendance—all Americans, who were doing what they could. Conditions were pathetic.⁵³ As already mentioned, he arranged with the commanding officer of Evacuation Hospital No. 5, just arrived at Sery-Magneval but not yet ready to receive patients, to send assistance to the wounded at Crepy-en-Valois railroad station. All these facts were reported to the commanding officer of the Third Corps as soon as possible on July 20, and

the fact emphasized that conditions at Crepy-en-Valois would continue and would tend to become worse as the congestion of wounded increased. The corps commander directed the corps surgeon to proceed to the lines and find medical personnel to cover the emergency at Crepy-en-Valois.⁵³ Medical officers of the 9th Infantry were the first to be found, and several of them were sent by ambulance to Crepy-en-Valois to assist in relieving the situation.⁵³ Through the work of the officer representing the chief surgeon, G-4, Paris group, which supervised the supply and evacuation of American troops engaged in the Marne salient, the timely arrival of hospital trains and an ambulance company with personnel sufficient to man the entrainment station at Crepy-en-Valois and the establishment at Sery-Magneval of Evacuation Hospital No. 5, the difficult situation was overcome by the afternoon of July 21.

The chief surgeon, Third Corps, reached the conclusion that when American troops were here put into action with the French all departments of importance, except the medical, were in contact, through officers skilled in such work, with the corresponding departments of the French Army.⁵⁴ The French took pains to inform the American division surgeons of their plans, but did so in a general way and did not associate medical with specific military plans. These latter were kept secret. On the other hand, American division surgeons failed to bring to the attention of the French the urgency of their situation.⁵⁴ Several officers, including the representative of the medical group of the general staff, the corps surgeon, and the division surgeon, worked along independent lines, not so coherently as would have been possible with better organization and information; but by their several efforts a great catastrophe was narrowly averted.⁵⁴

THE 4TH DIVISION

Activities of the 4th Division in the reduction of the Marne salient and immediately thereafter in its operations along the Vesle may be divided into two phases, the first from July 18 to July 22, and the second from August 3 to August 12. Yet between these dates certain units of the division also came into action for short periods.⁵⁵

During the former of these two phases (which is that described at this point), the division continued to be brigaded with the Second and Seventh Corps of the French Sixth Army, a little to the south of the 2d American Division. Its 7th Brigade served with the French Second Corps, the rest of the division serving with the French Seventh Corps, chiefly in support, though some elements saw front-line service.⁵⁵ None of these larger than a regiment operated as a tactical unit during the period of the division's service in the French Sixth Army, and as a rule battalions went into action with French regiments.⁵⁵ Three Infantry regiments were in the front line when the allied counteroffensive began on July 18, while the fourth (the 47th Infantry) was in immediate reserve with the 11th Machine Gun Battalion and two companies of the 4th Engineers, defending a position from Varinfroy to Riviere.⁵⁵

From left to right the French Sixth Army consisted of the French Second and Seventh Corps, the American First Corps, and the French Thirty-eighth Corps.⁵⁶ On July 17 the Second Corps front extended to a point south of Dammard and that of the Seventh Corps from this point to southeast of Hautevesnes.⁵⁵

* * * In the sector of the Second Corps the 39th Infantry was placed under orders of the 33d Division (French), and on the afternoon of July 16, 1918, received orders to relieve French troops then in line. This relief was nearing completion on the night of July 17-18, when orders were received to attack at 8 a. m. July 18. The attack was made in accordance with plans, and all objectives were taken by 3 p. m., after which the regiment took Norroy, which, according to plans, was to have been taken by the French. At 4 a. m. July 19 the regiment again advanced, taking its three successive objectives as ordered. At about 5 a. m. July 19 the regiment received orders to withdraw from the line, upon its relief by French troops, which was done during the night of July 19-20.

* * *

* * * In the sector of the French Seventh Corps the 58th and 59th Infantry and 12th Machine Gun Battalion were attached to various elements of the 164th French Division.

The 58th Infantry was placed with the attacking troops. Two battalions of the 59th were placed as safety garrison of the position of resistance and one battalion in reserve for the army corps at Marmon-la-Poterie. These reserve battalions were sent forward on July 19. On July 18, at 4.35 a. m., without artillery preparation, the French and American troops advanced to the attack after a fire of smoke shells. Hautevesnes was taken at 5 a. m., Courchamps about 11 a. m. The American troops * * * took the village of Chevillon, then advanced very rapidly to the Sept-Bois (southeast of Montmenjou), and passed through it. * * * The French and American units acting in conjunction took Priez and La Grenouillere Farm on July 19. * * * On the 20th Sommelans was taken, but Petret Farm on the south was not taken until July 21. Bois de Bonnes was entered on this date. On the 22d Bois de Bonnes was taken and Bois de Chatelet entered. On the nights of July 22-23 and 23-24 the elements of the 4th Division were relieved from the line. * * *

On July 28 the 4th Division came under control of the First Corps and assembled the next day in Bois de Chatelet.⁵⁵

MEDICAL DEPARTMENT ACTIVITIES

When the 4th Division entered on the first phase of its activities in the Aisne-Marne operation, the following plan was adopted for regimental aid: Two privates of the Medical Department and 8 bearers from the line were assigned to each line company. One officer, 1 sergeant, and 3 privates of the Medical Department, with 14 bandsmen as litter bearers, were assigned to each battalion in the front line; 1 officer, 1 sergeant, and 2 privates to each regimental aid station; the surgeon and 1 private to regimental headquarters. A relay bearer section was formed when the distance from the front line to the battalion aid station was more than 800 yards.⁵⁷

Evacuation of regimental and battalion stations was to be made by ambulances when possible. In spite of the assignment of additional personnel from the line, it was soon learned that the medical personnel, though thus reinforced, was insufficient for prompt portage of the wounded. The division surgeon was constantly receiving requests for more litter bearers.

and details of 30 to 40 men were made from ambulance companies to aid the regimental service.⁵⁷ Early in the first engagements it was demonstrated that only vigorous and courageous men should be assigned to the medical detachment of a regiment. Men reporting for duty at the front, brought up hurriedly at night, knowing nothing of the terrain, having had no experience with explosives, and without regimental *esprit*, might easily become lost or panic-stricken when sent out into strange territory to collect wounded men. It was recognized that only men of the highest type obtainable, after intensive training, could do this work satisfactorily.⁵⁷

During the first few days of battle a considerable number of men of the 4th Division returned to the rear, assembled around the kitchens or wandered about, claiming to have been gassed, lost, or thrown down by shell concussion and left behind. The number of men claiming to have been gassed was large. Medical officers of the division, having theoretical but not practical knowledge of the effects of toxic gases, gave these men the benefit of the doubt and evacuated them to the rear. Later, this mistake was corrected.⁵⁷

As American troops in the line were here interspersed with the French, it was decided to combine the evacuation service with that of the nearest French divisions and thus avoid duplication of effort. In conformity with an agreement between the *Médecine Divisionnaire* of the French 33d and 164th Divisions and the surgeon of the American 4th Division, our Field Hospital No. 19 was attached to the French triage at Mary-sur-Marne, functioning as a triage for troops of the 8th Brigade.⁵⁸ Ambulances having been furnished the ambulance section of the sanitary train, 8 G. M. C. ambulances and United States Army Ambulance Section No. 584, with 26 Ford ambulances, 5 medical officers, and 40 litter bearers reported to the French 164th Division at Vendrest for work with the evacuation service.⁵⁸

In the 7th Brigade area, during this period of service with the French 33d Division, Field Hospital No. 33 and Ambulance Company No. 33 were attached to the French triage and hospital for nontransportable wounded at Acy-en-Multien.⁵⁸

Special surgical operating teams with equipment and personnel were hurriedly sent by the American First Corps to the hospitals at Gue-a-Tresmes and Acy-en-Multien. All gassed patients were evacuated and treated at the hospital at Mary-sur-Marne. Evacuations were made to Juilly and Montanglaust, and later to Meaux.⁵⁸

THE FIRST CORPS

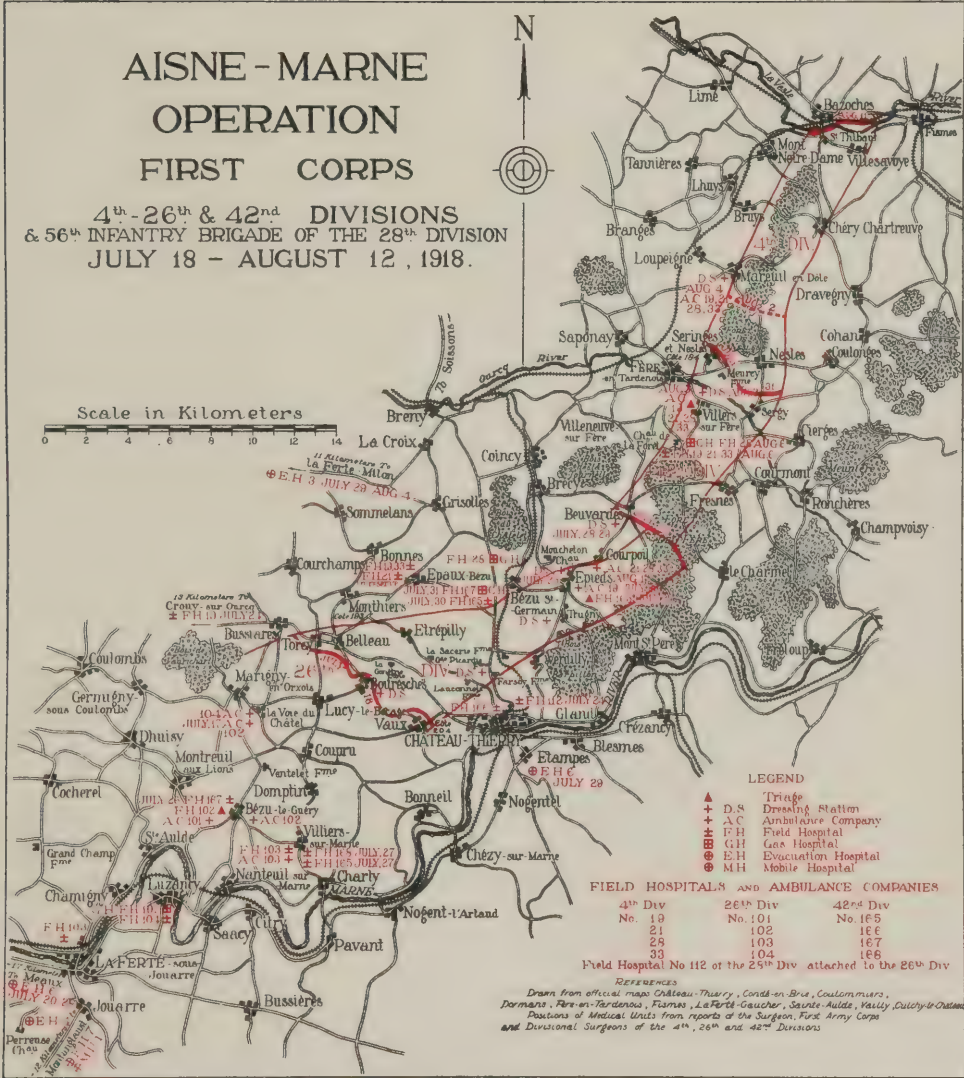
At the beginning of the Aisne-Marne operation the First Corps consisted of the French 167th and the American 26th Divisions.⁵⁹ In the operation of July 18 its first objective was the line of woods southeast of Hautevesnes—Torcy—Belleau.⁵⁹ The initial attack resulted in the capture of Torcy, Belleau, and Givry on that date.⁶⁰ Next day the advance was delayed by the network of machine-gun nests on Hill 193, south of Monthiers.⁶¹ On July 20 the objective assigned to the corps by the French Sixth Army

embraced the entire corps sector. In pursuance of the plan to straighten out the pocket formed between Chateau-Thierry and Soissons, the French 167th Division advanced this day farther than did the American 26th Division. For the moment the operation pivoted on the wooded crest of Hill 204, which hitherto had resisted all attacks and had dominated Chateau-Thierry and the line of the Marne. By evening of the 20th the pocket had been straightened out and the French Tenth and Sixth Armies had advanced their lines to the outskirts of Le Plessier-Huleu and Oulchy-la-Ville. Latilly, Bonnes, and Monthiers had fallen.⁶¹

From this point the axis of the corps, which hitherto had been nearly due east, swung to the northeast in a gradual parabola, and after crossing the Ourcq River ran in an almost northerly direction to the Vesle. It was incumbent on the First Corps and the French Thirty-eighth Corps on its right to make the greatest daily advance in conformity with elements on the left.⁶¹ On July 21 the corps made a maximum advance of 7 km. (4.3 miles), but for two days it was held up on the ridges to the northwest and south of Epieds, where the line stood on the 23d.⁶¹ On July 24 there was another advance of 5 km. (3.1 miles), when the corps was halted again south of Beuvarde. During the next three days an average advance of 1 km. (0.6 mile) per day was made.⁶¹

Meanwhile, on July 26, the French Seventh Corps on the left was withdrawn, as the wedges driven into the salient gradually closed in and the frontage diminished. Another result of this reduction of units and of the movement pivoted on the left was displacement of the limits of the corps sector to the west.⁶¹ On July 25 the 26th Division, which had been in line since July 10, was relieved—except its field artillery and engineers—by the 42d Division. The 101st Engineers and the Artillery brigade remained in line until August 3 and 4, respectively.⁶² On July 26 the 42d Division relieved the French 167th Division also. From that time until the Vesle was reached the First Corps had but one division in the line.⁶¹

On July 28 a maximum advance of almost 5 km. (3.1 miles) was made, the 42d Division crossing the Ourcq the following day, on a 3-km. (1.8 mile) front and capturing Meurey Ferme and Sergy.⁶¹ On July 28 the French Tenth Army had captured all the crests to the west of the Crise. Hartennes-et-Taux and Grand Rozoy had been liberated, so that the Chateau-Thierry—Soissons road was inside allied lines to within less than 4 km. (2.4 miles) of Soissons.⁶³ The entire line of the Marne had been cleared. As was learned later from German prisoners, it was here that the German command decided to make a last stand while it withdrew its divisions and supplies beyond the Vesle.⁶³ Therefore along the Ourcq occurred the most stubborn fighting on the corps front during the entire operation.⁶³ On the yellow wheatfields sloping gradually eastward from Meurey Ferme; on the heights of Hill 184, and along the little mud road rising steeply from Sergy to the Peuplier disk on the crest, remained innumerable evidences of the stubbornness of the fighting.⁶³ "Bodies of our men often lay in rows not 20 yards from the German fox holes; the opposing lines were often within a stone's throw of



Battle lines, taken from existing orders and maps, are approximate.

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each other, and the bodies of German and American dead in the same machine-gun nests were a further testimony of the mutual stubbornness of the conflicts."⁶³

From July 28 to August 2 the First Corps was held again north of the Ourcq. During this period, however, its line formed a flattened salient, and it was natural, therefore, for the corps to hold its position until the corps on the left and that on the right had advanced their lines in conformity with its front.⁶³

By August 1, when this rectification had been made, the German command apparently had decided to fall back immediately to the Vesle. On August 2, the corps advanced 3 km. (1.8 miles). Next day the 4th Division relieved the 42d and pushed forward almost without opposition through Bois de Dole to the Vesle, where it took over the sector of the French Second Corps, which included the French 62d Division.⁶³ On the 6th a crossing was effected and the outskirts of Bazoches reached.⁶³ The engagement along the Vesle was sustained and severe, so that casualties suffered by the 4th Division were numerous. On August 12 the 77th Division relieved the 4th, and on the 13th the First Army Corps was withdrawn and sent back to La Ferte-sous-Jouarre.⁶³

MEDICAL DEPARTMENT ACTIVITIES

Though the 26th Division, the first division of the first corps to be engaged, had many casualties during the early part of this operation, and evacuation service was arduous, roads were excellent, hauls were comparatively short at first, and there were no very severe difficulties in the corps evacuation service.⁶⁴ By 10.40 p. m. of July 18 the enemy had been driven to the line Noroy, east of Courchamps, east of Licy-Clignon, Torcy, Belleau, Bouresches.⁶⁴ Evacuations had been made in accordance with recommendations formulated by the corps surgeon and published in Secret Orders, No. 6, July 9, 1918, concerning evacuation of sick and wounded. This order is quoted in Chapter XI.

In this connection, and in connection with the history of the First Corps, it should be explained that as the war progressed the corps surgeon's immediate responsibilities for the evacuation of sick and wounded became somewhat less than the foregoing order quoted in the chapter on the Champagne-Marne operation indicates that they were at that time. This was especially true with reference to the location of division field hospitals, which, except for the initial location, were later placed by the division surgeon after consultation with the corps surgeon. In preparation for an attack the initial location was generally selected by the corps surgeon, as he had knowledge of road conditions and supply points which the division surgeon usually did not possess. Later also the corps surgeon, through the commanding officers, corps sanitary train, took over evacuation from field hospitals to evacuation hospitals and relieved the division surgeon of all responsibility back of the field hospitals. This could not be done in these earlier engagements because of lack of transportation belonging to the corps. The corps surgeon then had only sufficient transportation for his own office purposes and had no sanitary train.⁶⁵

As it was evident that the sanitary personnel of a division was inadequate to care for the casualties of active operations, the foregoing order contemplated that additional personnel be obtained by division surgeons through the corps surgeon from Medical Department personnel in reserve. The expedient was unsatisfactory, for such men needed all the rest they could obtain, but the order mentioned above was secured in default of better measures, with a view to meeting what appeared to be an impending shortage. In point of fact it did not prove necessary to call on the sanitary troops of other divisions, in reserve during this operation, and adequate assistance in removing wounded from the field was soon made available in a more satisfactory manner by temporary assignment to this duty of selected men from each line company.⁶⁵ The corps order directing this practice was published July 30.⁶⁶

As the situation changed, the provisions concerning evacuation prescribed by Order No. 6, published July 9, were modified from time to time. On July 18 the following was issued:⁶⁷

(a) After the advance has passed the road Etrepilly—Grande Picardie Ferme—Les Rochets Ferme—Vaux, an advance dressing station will be established by the Sanitary Train, 26th Division, at Bouresches.

Evacuation route: Bouresches — Lucy-le-Bocage — Montgivrault — Petit-Paris road—Ventelet Ferme—Bezu-le-Guery.

From latter point as per par. 1 (f), Part II, Order No. 6, First Army Corps, July 9, 1918.

(b) For 167th Division (French) after the advance passes the road as above, a triage will be established at Marigny-en-Orxois.

Evacuation will be by Cocherel and the axial road of the division.

On July 19 and 20 there was no change in the plan of evacuation. By 10.40 p. m on July 21 the French Sixth Army had passed the Chateau-Thierry—Soissons road between the Ourcq and Clignon and had reached the road Bezu—Epieds—Charteves.⁶⁸

Field Order No. 19, July 21, published the following concerning evacuation of sick and wounded:⁶⁹

No change except as follows:

(a) When the 26th Division (U. S.) has advanced beyond Trugny it will establish a triage at Bouresches. An advance dressing station will also be established at La Sacerie at this time.

Evacuation route: Road La Sacerie south to Point 190, thence northwest via Gde Picardie Farm to Point 225, thence via La Gonetrie Fme to Bouresches. From this point as prescribed in previous orders.

(b) The 167th D. I. (French) will continue to maintain a triage at Marigny-en-Orxois. The chateau at this station will be left vacant for the post of command of the Sixth Army.

Evacuation route: Road Marigny-en-Orxois to Paris road, thence via La Ferte.

Field Order No. 21, dated July 23, made the following change in plan of evacuation:⁷⁰

(b) The 167th D. I. (French) has moved its triage from Marigny-en-Orxois to Belleau and will establish at Cocherel a station for nontransportable wounded.

Evacuation route: From Belleau—the axial route of the division.

From Cocherel road Cocherel—Porte Ferree to main Paris road; thence on the axial road of the division.

The line of evacuation was becoming long. This condition, which continued to grow worse during the operation, later caused great difficulty. It was due to the inability of headquarters of the Paris group to bring evacuation hospitals nearer to the front. That organization fully realized the situation and used every effort to meet it, but before relief could be effected the lines had advanced so far that ambulances were covering as much as 112 km. (70 miles) on a round trip.⁷¹ Another unfortunate result was that cases were operated at the hospital for nontransportable wounded which would have been sent for operation to the rear had evacuation hospitals been within reach. The only mobile surgical hospital available at this time was No. 1, and this was placed at Montanglaust with Evacuation Hospital No. 7.⁷¹

Relief of the 26th Division by the 42d was promptly accomplished, the mission of American troops remaining unchanged.⁷²

Field Order No. 24, July 25, 3 p. m., contained the following pertaining to the plan of evacuation:⁷³

As previously prescribed for the 167th (French) Division and the 26th (U. S.) Divisions:

The 42d Division (U. S.) will establish an advance dressing station and a sorting station at points now existing for the 26th Division.

The 56th Brigade, 28th Division, will evacuate through the sanitary units of the 26th Division.

As the advance progresses, new advance dressing stations and sorting stations will be established under the direction of the corps surgeon.

The entire front of the First Corps was now held by the 42d Division, which met stiff resistance at first, especially at the crossing of the Ourcq, and suffered many casualties. The 26th Division fell back to the vicinity of Etrepilly for rest and re-forming. The 167th (French) Division passed to the army reserve. The 42d was ordered vigorously to pursue the attack, which, on account of the narrowness of the sector, was often made on a battalion or company front.⁷⁴

Part II of Field Order No. 25, July 26, 1 p. m., prescribed the following changes in the evacuation service:⁷⁵

167th Division (French). Upon relief of this division it will withdraw its triage at Belleau.

42d Division (U. S.). Has established an advance dressing station at Trugny and a sorting station at Farsoy Fme near Point 190 on the Chateau-Thierry road and is establishing a station for nontransportable wounded at Villiers-sur-Marne.

26th Division (U. S.). Upon relief of this division it will withdraw its advance dressing station and its sorting station. * * *

56th Brigade, 28th Division (U. S.). Will evacuate through the evacuation system of the 42d Division (U. S.).

There was no important change at this time in the general plan. Evacuation hospitals had not yet been brought forward, and the strain on transportation imposed by the necessarily long hauls was terrific. The 42d Division now established a hospital at Villiers-sur-Marne for nontransportable wounded, but this relieved the situation to only a limited extent.⁷⁴

July 27 the advance continued, the First Corps attacking in the direction of Sergy and Villers-sur-Fere.⁷⁶

Field Order No. 27, dated July 28, announced that the enemy had evacuated Fresnes and Courmont, and it was thought that he had taken up a position to the north of the Ourcq. The 42d Division was ordered to attack.⁷⁷ A memorandum from corps headquarters, dated July 28, 1 p. m., directed the 42d Division to establish an advance dressing station at Beuvarde.

Field Order No. 30, July 29, 1918, at 23 hours, directed the following changes in the evacuation service:⁷⁸

4th Division (U. S.). Station for slightly sick, skin and venereal diseases, to a field hospital established at Bussières. Only cases will be sent to this hospital as will be ready for duty in four days. All other sick and wounded will be sent to Evacuation Hospital No. 7 at Montanglaust, near Coulommiers.

Evacuation route: By the main Soissons—Chateau-Thierry—Paris road to La Ferté-sous-Jouarre. Thence direct on the main road to Coulommiers.

42d Division (U. S.). Advance dressing station at Beuvarde. All sick and wounded of whatever character, except nontransportable wounded, to Evacuation Hospital No. 7, at Montanglaust, near Coulommiers. Seriously wounded (nontransportable) to Chateau-Thierry.

Evacuation route as previously prescribed.

Corps and Army troops and attached French troops will be evacuated as prescribed for the division to which attached or the division nearest to which they are functioning.

* * * * * *

From this order it will be noted that the wounded were still to be sent to Evacuation Hospital No. 7, at Montanglaust. This was one of the worst periods in the evacuation service of the First Corps in this area. Hauls were almost more than could be accomplished, with all the assistance that could be given by United States Army Ambulance Service sections, corps ambulances, and ambulances from the sanitary trains of divisions not then in the line.⁷⁹ The 32d and 3d Divisions aided materially by the use of their ambulances during this period. The 42d Division now established a hospital for nontransportable wounded in Chateau-Thierry which helped considerably.⁷⁹ Both this hospital and the one at Villiers-sur-Marne were required to operate on too many patients, but, owing to the length of the haul to evacuation hospitals, this was unavoidable.⁷⁹ By July 30, the 42d Division had suffered 2,454 casualties, which fact gives some idea of the amount of evacuation carried out over these tremendous hauls. Roads were also badly congested, thus aggravating the difficulty of transportation. Though always given right of way and aided in every possible manner, ambulances often were detained unavoidably en route, but not to so great degree as later in the Meuse-Argonne operation.⁷⁹

Field Order No. 32, dated July 31, 1918, contained the following concerning the evacuation service:⁸⁰

No change in plan of evacuation of sick and wounded except as follows:

(a) Evacuation of seriously wounded (nontransportable cases *only*):

4th Division: To Evacuation Hospital No. 3 at La Ferté-Milon.

Evacuation route: Beuvarde—Beuvarde—Brecy—Bezu-St. Germain—Autrecourt; thence north on Chateau-Thierry—Soissons road; thence northwest on the main highway via Grisilles—Latilly—Neuilly-St. Front; thence west to La Ferté-Milon.

26th Division: To Evacuation Hospital No. 7, at Montanglaust, near Coulommiers.

Evacuation route: As prescribed previously.

4th Division: To Evacuation Hospital No. 5, at Etampes, just south of Chateau-Thierry.

Evacuation route: As prescribed previously.

Corps troops: To Evacuation Hospital No. 7, at Montanglaust, near Coulommiers.

Evacuation route: As prescribed previously.

(b) Slightly wounded of the 42d Division will be sent to Evacuation Hospital No. 4 at Chateau Perreuse, just west of Jouarre (which is on the main La Ferte-sous-Jouarre—Coulommiers road). Any overflow will go to Evacuation Hospital No. 7, at Montanglaust, near Coulommiers.

(c) All other sick and slightly wounded of the other divisions and corps troops will be sent to Evacuation Hospital No. 7 at Montanglaust, near Coulommiers.⁸⁰

The location of Evacuation Hospital No. 3, at La Ferte-Milon, on July 29, for nontransportable wounded only, was of some help, but as the hospital was well off the left flank it did not relieve matters materially in this corps, and it was too far away for the more serious nontransportable cases.⁸¹

Evacuation Hospital No. 4 had also been established, on July 22, at Chateau Perreuse; but as this was south of La Ferte-sous-Jouarre, neither was it of much benefit.⁸¹

On August 2-3 the 4th Division relieved the 42d, the latter becoming corps reserve.⁸²

Field Order No. 34, dated August 1, 1918, prescribed the following changes in evacuation methods:⁸³

(a) 4th and 42d Divisions:

Evacuation of seriously wounded (nontransportable cases only). Extreme cases only to the field hospital of the 42d Division, located at Bezu-St. Germain.

Other seriously wounded cases to Evacuation Hospital No. 6, at Etampes, just south of Chateau-Thierry. Overflow to Evacuation Hospital No. 3, at La Ferte-Milon.

Slightly wounded and other cases to Evacuation Hospital No. 4, at Chateau Perreuse. Overflow to Evacuation Hospital No. 7, at Montanglaust, near Coulommiers.

Evacuation routes: As prescribed previously.

(b) 26th Division and corps troops: As prescribed previously.

Field Order No. 36, August 3, announced that the enemy was retiring across the Vesle and that troops on the left had already reached that river, with troops on the right in close pursuit. Orders were issued to establish bridgeheads across the Vesle.⁸⁴ The Chateau-Thierry salient had been completely eliminated.

On August 6, field hospitals of the 4th Division, then in the line, were grouped at Chateau de la Foret, as described in the history of the 4th Division. Evacuations were now effected from the division by the corps sanitary train, this method proving so satisfactory that when, on August 12, the 77th Division relieved the 4th it carried on the same arrangements. Activities then were lessened somewhat, and evacuation, conducted under the same plans as those mentioned for the 4th Division, presented no great difficulties.⁸⁵

The First Corps was withdrawn from the line on August 12 and its headquarters returned to La Ferte-sous-Jouarre, where it remained until

August 18.⁸⁵ The American Third Corps then took over the First Corps sector, under control of the French.⁸⁶

Several developments in the Marne area were of especial interest to the Medical Department in connection with service of the First Corps and its component divisions:

(1) *Inadequacy of ambulance transportation.*—While sufficient for trench warfare, the number of ambulances in the division sanitary train proved entirely inadequate to care for casualties arising in active, open warfare. For slightly wounded and slightly gassed cases it was necessary to use all the trucks that could be procured. In addition, all the United States Army Ambulance Service sections that could be obtained, plus ambulances of the corps sanitary train, were required, working to full capacity, to meet the need when casualties were heavy. Except for following troops on the march, animal-drawn ambulances proved of little value.⁸⁵

(2) *Long hauls.*—The long hauls impaired transportation greatly. For a considerable period, evacuation hospitals could not be brought forward within a reasonable distance from the front, and there were times when the round trip of an ambulance covered 96–112 km. (60 to 70 miles). This was a feature of open warfare which could be met only by the establishment of additional evacuation hospitals to receive patients from divisional units.⁸⁵

(3) *Road congestion.*—Great road congestion prevailed. In the First Corps, in spite of the fact that ambulances always had the right of way, delays were frequent and distressing. Yet in the Aisne-Marne operation, where but one American division was in the line at one time, the problem was not nearly so difficult as it proved later in the Argonne.⁸⁵

(4) *Inadequacy of sanitary personnel.*—The sanitary personnel attached to regiments and other units proved very inadequate during periods of activity. This difficulty, as previously noted, was overcome in the First Corps by an order detailing men from the line companies to serve as litter bearers. This, the necessary and only possible solution during the war, was but a makeshift measure. The use of bandsmen as litter bearers proved inadvisable; even when they were employed their assistance amounted to relatively little in great emergencies. Furthermore, music was of such value in maintaining the morale of troops that it was believed skilled musicians should not be subjected to the dangers attendant upon litter bearing.⁸⁷

(5) *Position of division surgeon during battle.*—In only one division in the First Corps during the activities in the Marne area was the division surgeon located at the divisional post of command, and this only for a brief period. Normally he was with the field hospital section of the sanitary train, detailing to the division command post a subordinate officer who kept him advised concerning tactical changes. When at the former, the division surgeon was in touch with all elements of the medical service and, in the opinion of the corps surgeon, could direct evacuations infinitely better than if relatively isolated, well forward, with the division commander.⁸⁷

(6) *Burial of the dead.*—This painful duty became a most serious sanitary problem and one intimately connected with the question of morale. It was decided that divisions should not be called upon to perform this work, on the ground that, though prompt burial of the dead was essential, during combat their line troops could not be spared from the front for this purpose; and after combat such troops would be mentally and physically exhausted. Moreover, the effect of this kind of service was found to have a most injurious effect upon the morale of combatant troops; on the other hand, if, when returning from the battlefield, they saw no evidences of the recent engagement they were not so depressed as otherwise they would have been. Prompt clearing of the battlefield by removing and caring for all the wounded and decently burying all dead had a powerful effect on maintaining the *esprit* of troops.⁸⁸

As the corps advanced over this front many dead bodies of men and animals were found scattered over the terrain, numbers of them having lain there apparently for 10 days or longer. This was especially remarked around Fere-en-Tardenois, where many French and German dead lay just outside the town. The stench from these bodies was intolerable. Dead horses lay at short intervals along the way, many having died from exhaustion. The weather was hot and the bodies of both men and animals had become black, swollen, disorganized masses of organic matter, alive with maggots. Flies bred in millions and soon became an intolerable nuisance as well as a more or less serious menace to health. Other insanitary conditions existed, and there was much reason to apprehend an outbreak of intestinal diseases.⁸⁹

The corps surgeon prepared a request, which was forwarded approved by the corps commander, that a labor organization of 500 men be assigned to the corps for the sole purpose of burying the dead. They were to work with the Graves Registration Service, so that proper identification of the dead and the care of their effects might be assured. This request was returned from General Headquarters disapproved. The corps surgeon then recommended that Pioneer Infantry be allotted for this purpose. This recommendation was approved and thereafter applied in the First Corps, with striking improvement in its battlefield sanitation. Fields were promptly cleared of the dead, and the bad conditions about Chateau-Thierry never occurred again.⁹⁰ The men assigned to this work did faithful service, often so close to the front that several of them were killed on one occasion. Their work was arduous. In this connection it should be explained that incineration was impossible, both on account of lack of fuel and from the danger of attracting enemy fire by smoke by day or flame by night.⁹¹

At first these Pioneer Infantry troops were detailed to work under the division quartermaster, but this was soon found to be an unsatisfactory arrangement, as the quartermaster was generally near the railhead and preoccupied with other duties. The corps surgeon then recommended that these troops be placed under the division sanitary inspector for the sole duty

of burying dead men and dead animals. This plan was approved and was ordered in paragraph 11, annex 9, "Plan of communications, supplies, and evacuation," of Field Order No. 57, First Army Corps, September 22, 1918, as follows:⁹²

Burials:

(a) Every effort will be made to promptly and properly bury the dead and to secure proper identification.

(b) Dead animals will be promptly buried.

(c) To bury the dead and to promptly dispose of dead animals each front-line division has been furnished with one company of Pioneer Infantry. These companies will be dispatched so as to arrive not later than noon of D-1.

These troops will be reported to and will work under direction of the divisional sanitary inspector.

(7) *Mobile surgical hospitals.*—These, in the opinion of the surgeon of this corps, should be readily movable and should be placed under the corps surgeon's immediate control.⁹³ Two of these, he concluded, were adequate for a corps under usual circumstances.

(8) *Standard plan for evacuation.*—The need for a plan of evacuation applicable to all divisions in the American Expeditionary Forces, the proper carrying out of which could be made feasible by early information concerning the military situation, had already been recognized. This war of movement had shown that this plan should be elastic, yet comprehensive enough to cover all probable conditions.⁹³

(9) *Hospital Corps belt.*—In the opinion of the corps surgeon this belt proved almost useless. The 42d Division substituted for it pouches similar to the old Hospital Corps pouch. These, obtained through the Red Cross, proved very satisfactory. An effort was made to procure them for every division in the First Corps, but this did not prove practical and, in any event, the changes of divisions in the corps were so frequent that it would have been difficult to supply all the divisions in the short time available.⁹³

Upon their return from the front line and into the army reserve it was immediately evident that the troops were utterly exhausted, both mentally and physically. While camps were established in shelter tents in the woods, the simplest camp sanitary precautions sometimes were disregarded. Thus in some instances no latrines were provided, or, if dug, were left uncovered and uncared for. The result was the breeding of more flies. Some of the troops too were disposed to drink water from any supply available, such as in shell holes or from other questionable sources. In one battalion which had lost every officer as a battle casualty there was notable sanitary disorganization, and similar conditions existed in other organizations. It is true the camps were regarded as temporary, but actually they remained established longer than had been anticipated and soon were very insanitary.⁹⁹ With indifferent food, bad water (many Lyster bags had been lost in the advance), myriads of flies, and lowered physical and mental vitality, many cases of intestinal disease developed. A sanitary inspector from the central laboratory reported true Shiga, Flexner, and paratyphoid bacilli, as well as certain aberrant types. Fortunately, the infection was mild, for there was no mor-

tality and patients were sick for a few days only; on the other hand, cases were very numerous, and there was reason to fear that a serious epidemic might supervene. Previous antityphoid and antiparatyphoid inoculations apparently saved the troops from what would have been a severe epidemic of these diseases, but their administration does not explain the escape of the corps from a serious outbreak of dysentery. Conditions called for vigorous action, and effective sanitary measures based on accepted methods were soon ordered and enforced.⁹⁰

THE 26TH DIVISION

The 26th Division had relieved the 2d Division July 10 and held 5 km. (3.1 miles) of front between Belleau and Vaux.⁵⁹

The 52d Brigade, on the left, attacked at 4.35 a. m. July 18, with three battalions in line. Objectives were the railway from Givry to Bouresches, Belleau, and Givry, and the town of Torcy. This was taken by 5.40 a. m., Belleau and Givry by 8.30 a. m., and the railroad at about the same time. The line was consolidated and held.⁹⁴

On the 19th the 26th Division, awaiting the division on its left (French 167), which was delayed, remained in place and so continued until 3 p. m. on the 20th of July. An attack was then made along the entire front, in conjunction with the French 39th and 167th Divisions. The first objective was gained, and the line was as follows: Givry—Woods one-half kilometer north of les Brusses Ferme—Les Brusses Ferme—Hill 190—La Gonetrie Ferme—Hill 201.⁹⁴

At 4 a. m. on July 21 the advance was resumed, the two brigades moving abreast. The enemy fell back and was pursued closely until troops reached the vicinity of Epieds and Trugny. In the woods near the latter place he had strong defenses.⁹⁴

At 6 o'clock on the morning of July 22 the advance was resumed, and in spite of severe enemy fire, Epieds and Trugny were taken, but later the troops were withdrawn because of heavy artillery fire.⁹⁴ At 3 p. m. on the same date another attack was launched by a battalion of the 103d Infantry and a battalion of the 102d Infantry, but the advance was slight. The 101st Infantry was then directed to break through on the division front on a line east of Trugny. This attack, made next day, gained some ground.⁹⁴ During the night of July 23-24 the 56th Brigade (28th Division) relieved the 52d Brigade.⁹⁴

On the 24th, after some delay, another advance was made, and occupied a line in the Foret de Fere west of the Fere-en-Tardenois—Jaulgonne road.⁹⁴ During the night of July 24-25, the 42d Division passed through and relieved the 26th, the latter remaining in reserve near La Ferte.⁹⁴

MEDICAL DEPARTMENT ACTIVITIES

In the lines, men sheltered themselves as best they could in individual excavations, and in farm houses, villages, and behind the banks of water-courses. As villages were often shelled, the heavily built cellars of farm-

houses proved the best sites for aid stations. When these were not available, the stone culverts of dry watercourses, or shallow excavations, usually covered with logs, were utilized. The prescribed aid station equipment and other supplies were replenished by bearers and ambulances.⁹⁵

SANITARY TRAIN

Dressing stations were established at La Voie du Chatel (Ambulance Company No. 104) on the north and at Villiers-sur-Marne (Ambulance Company No. 103) on the south, with ambulance heads as far forward as cover permitted.⁹⁵ The natural drift of wounded men made the former station very active, the latter only slightly so.⁹⁵

About midway between, at Bezu-le-Guery, and just beyond the usual range of enemy shells, a triage and gas station were operated by Field Hospital No. 102. Ambulance Companies No. 101 and No. 102 were also located here.⁹⁵ Well to the rear, but not beyond extreme artillery range, at Luzancy, Field Hospitals No. 101 and No. 104 were established in a large schoolhouse, where they operated, together, a hospital for the slightly wounded, gassed, and sick.⁹⁵ At La Ferte-sous-Jouarre, several miles in the rear, Field Hospital No. 103, reinforced by 6 operating teams and 35 nurses, operated a hospital for severely wounded, in a large convent converted into a well-equipped surgical hospital.⁹⁵

United States Army Ambulance Section No. 502 evacuated from the ambulance heads to dressing stations, and divisional ambulances from the dressing stations to the triage and field hospitals.⁹⁵ Trucks of the sanitary train and such ambulances as could be spared evacuated patients from the field hospitals to Evacuation Hospital No. 7, at Montanglaust, near Coulommiers. (More than 2,000 patients had been evacuated by the sanitary units in the two weeks prior to July 18.)⁹⁶

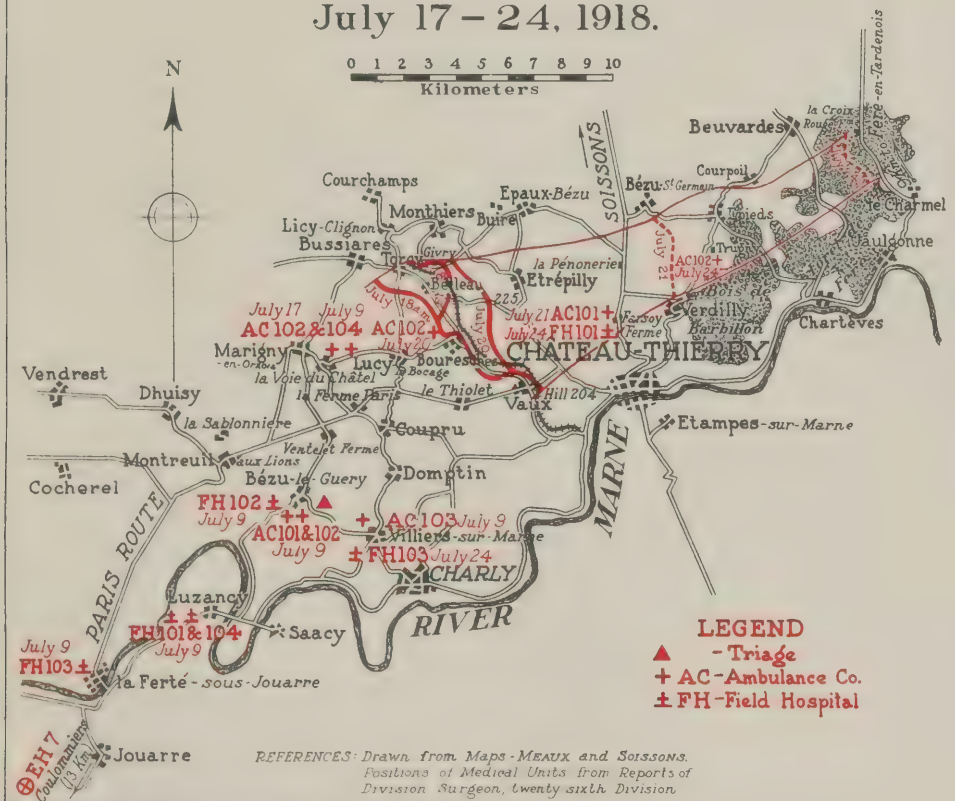
During the evening of July 17, in rain and inky darkness, Ambulance Company No. 102 moved up to reinforce Ambulance Company No. 104, at La Voie du Chatel, whence litter bearer sections were sent to reinforce the regimental bearers, in anticipation of the coming offensive.⁹⁶ At 4.35 a. m. July 18, the artillery opened fire, and the infantry attack began at 6 a. m. Thereafter for days the entire medical personnel worked continuously, resting only when an occasional lull permitted. The wounded accumulated in some numbers at all stations, but only for short periods. During the first day of the offensive 1,280 cases passed through the dressing station at La Voie du Chatel, and 1,648 through the triage at Bezu-le-Guery.⁹⁶

By July 20, the Infantry had reached a line from Monthiers to Vaux. Following this Infantry advance a dressing station was established on the same day at Bouresches.⁹⁶ As the division still pressed forward, a station was opened farther in advance, at Farsoy Ferme, near the Chateau-Thierry—Soissons road, and still later another station was established at Trugny. This was in a farmhouse in front of a wheat field, still bestrewn with the bodies of American and German dead.⁹⁶ All the ambulance companies participated in operating these dressing stations, advancing by the "leapfrog" method;

AISNE - MARNE OPERATION

26th DIVISION

July 17 - 24, 1918.



i. e., one company from the rear passed the one in operation and began work farther forward, the station left in the rear now closing and going into reserve, to be advanced again when needed.⁹⁶ This method worked so well in this offensive that, modified as circumstances required, it was used by the 26th Division throughout the war.⁹⁶

The sanitary train of the 26th Division was equipped with the following transportation for evacuation of the wounded:⁹⁷

G. M. C. of the three ambulance companies of the division.....	39
G. M. C. of the 162d Ambulance Company from the 1st Corps.....	12
<hr/>	
Total G. M. C.....	51
Ford U. S. Army Ambulance Section No. 502.....	20
<hr/>	
Total motor ambulances.....	71
<hr/>	
Three-ton trucks from sanitary train.....	28
Three-ton trucks from 101st Supply Train.....	12
<hr/>	
Total 3-ton trucks.....	40

Even with this large transport, the wounded accumulated at Bezu-le-Guery and Luzancy faster than they could be removed, for vehicles were obliged to carry the wounded from the hands of litter bearers at the front, through dressing stations, triage, taking the overflow at Luzancy, to the nearest evacuation hospital—No. 7, at Montanglaust, near Coulommiers—a distance all told of 60 or more kilometers (37.2 miles). This rear service was, of course, one which our regulations for the operation of the medical department of a division had never contemplated. Fifty to sixty hours' continuous duty was not unusual for ambulance drivers, no vehicle standing still longer than was necessary to load, unload, grease, gas, water, and repair. At no time was there any avoidable delay in the evacuation of casualties. Roads were often crowded and occasionally were blocked by impassable shell fire, but even then they were soon opened.⁹⁷

The 12 animal-drawn ambulances of Ambulance Company No. 101 were posted with the Field Artillery, which, due to its location farther to the rear, was more readily served by animal-drawn vehicles.⁹⁸ These vehicles were assigned to like duty throughout subsequent operations. They could sometimes get over ground impassable to motors.⁹⁸

During this operation, liaison between the ambulance heads ("cab stands") and battalion aid stations was defective. Normally, this would have been effected by the litter-bearer sections of ambulance companies operating the dressing stations, but in this operation the litter-bearer sections of the ambulance companies were distributed for duty with regiments, where they either collected wounded or assisted at battalion aid stations.⁹⁸ Ambulance drivers found difficulty in locating the rapidly moving battalions.⁹⁸

Realizing the total inadequacy of litter bearers at the disposal of regimental and battalion surgeons, and the consequent necessity of depleting ambulance companies by reinforcing battalion bearers with ambulance company

litter bearers, the commanding officer of the sanitary train on July 3 strongly recommended and urged the immediate assignment of line company bearers at the rate of 12 to each line company or corresponding unit. This request was complied with on July 28, by which time the necessity for the measure in question had been demonstrated to the satisfaction of all concerned.⁹⁹

In accordance with the division surgeon's request, this order specified that company commanders were to select for litter-bearer service only men of the strongest physique, best intelligence, and courage. No weaklings, mental or physical, were to be included.⁹⁹

Medical supplies were brought up by ambulances in compliance with requests sent back by them. Information concerning conditions at the front which orderlies of these ambulances brought back was of inestimable value to the officers and formations toward the rear.⁹⁹ Prompt bihourly reports of casualties from the triage kept both division surgeon and division commander informed of battle conditions. They indicated the places where greatest resistance was occurring.⁹⁹

An effective method for bath treatment of gas casualties was developed at the triage, although equipment and water were scarce. Under convenient shelter, rows of inclined planes were constructed by placing litters on wooden trestles of unequal height. These litters were covered with rubber blankets and drained into buckets at their lower ends. Above, suspended from wires, were douches for the eyes, nose, and ears. Watering pots containing strong soap solution were utilized for the face. Attendants were protected by gas-proof clothing and gloves. The Red Cross assisted in promoting the comfort of patients.¹⁰⁰

When the sector was taken over many unburied bodies of both men and animals were found, and during the first day's occupancy 50 of these were buried in one wood alone.⁹⁹ Numerous casualties occurred among burial parties.⁹⁹ Many of the bodies had been but slightly covered with earth in the shallow holes that had been dug for shelter, and frequently an extremity protruded.⁹⁹ As the troops in exposed positions kept close in their shelters the soil in and near these became polluted. Enemy locations were subsequently found to be nearly as bad.¹⁰⁰ Latrines often contained moving masses of maggots, and flies appeared in enormous numbers. Food, when obtained, was often sour from long carriage.¹⁰⁰ Practically 100 per cent of the command was attacked by diarrhea. The disease was so mild, however, that not more than 2 per cent of those affected had fever or required hospitalization. The French civilian population suffered more severely than did the troops.¹⁰⁰ With improved sanitation, this epidemic, attributed to bacteria conveyed by flies, disappeared.

On being relieved the division spent two weeks in reserve and then moved to the twelfth rest area, in the vicinity of Chatillon-sur-Seine.¹⁰⁰

THE 42d DIVISION

On July 25 the 42d Division relieved the 26th in the Epieds area, and next day the French 164th and 167th Divisions.¹⁰¹

On July 26 the 84th Brigade attacked in the direction of La Croix Rouge Ferme and captured the buildings, with heavy losses.¹⁰²

On July 28, in spite of strong resistance, both brigades crossed the river, captured Sergy, and established themselves on the northern banks of the stream. The enemy launched a heavy counterattack and recaptured Sergy, but was again driven out.¹⁰²

On the morning of July 29, Sergy was definitely occupied. In the afternoon, despite stubborn resistance, the 83d Brigade took Seringes, and at 8 that night the division held the line Seringes—Meurcy Ferme—Sergy—Hill 212.

On July 30 the division again attacked. The 83d Brigade advanced to the southwest edge of Foret de Nesles, the 84th Brigade to 1 km. north of Sergy.¹⁰²

On July 31 the 84th Brigade attacked on the right, without success.

On August 1 the 84th again attacked, but was unable to advance on account of its exposed right flank. On August 2 the advance continued. The enemy was withdrawing and pursuit was active, reaching a line south of Marcuil-en-Dole—Chery-Chartreuve, an advance of 15 km. (9 miles).⁷¹ On the night of August 2-3 the division was relieved by the 4th.⁷²

MEDICAL DEPARTMENT ACTIVITIES

As before, 1 enlisted man of the Medical Department to render first aid, and 12 litter bearers from the line were assigned to each company or battery, the remainder of the Medical Department detachment on duty with a battalion being held at its aid station.¹⁰³ Whenever possible such stations were located at command posts, often in the same building with them. Shelter was of a superficial nature, detachments often caring for the wounded under direct enemy observation and shell fire.¹⁰³

Because of road congestion, the large number of casualties, and the long distance to evacuation hospitals, the removal of patients to them was retarded, with the result that the wounded accumulated at all sections.¹⁰³ At the aid stations the walking wounded were tagged and started, unaccompanied, to the dressing stations, only litter cases being held for ambulances. Trucks, escort wagons, and United States Army Ambulance sections gave material aid in relieving these stations near the lines. Doubtful cases attributed to gassing were held until definite diagnosis could be made, thus preventing some unnecessary evacuation.¹⁰³

As the battalions advanced, aid station detachments left one or two Medical Department men at the old station until patients were removed, while the remainder of the personnel advanced to establish the new station.¹⁰⁴ Men (Medical Department) on duty with front-line companies were relieved at intervals by other men from the aid station personnel, and in a similar manner medical officers were sent forward from the ambulance companies to relieve exhausted battalion surgeons.¹⁰⁴

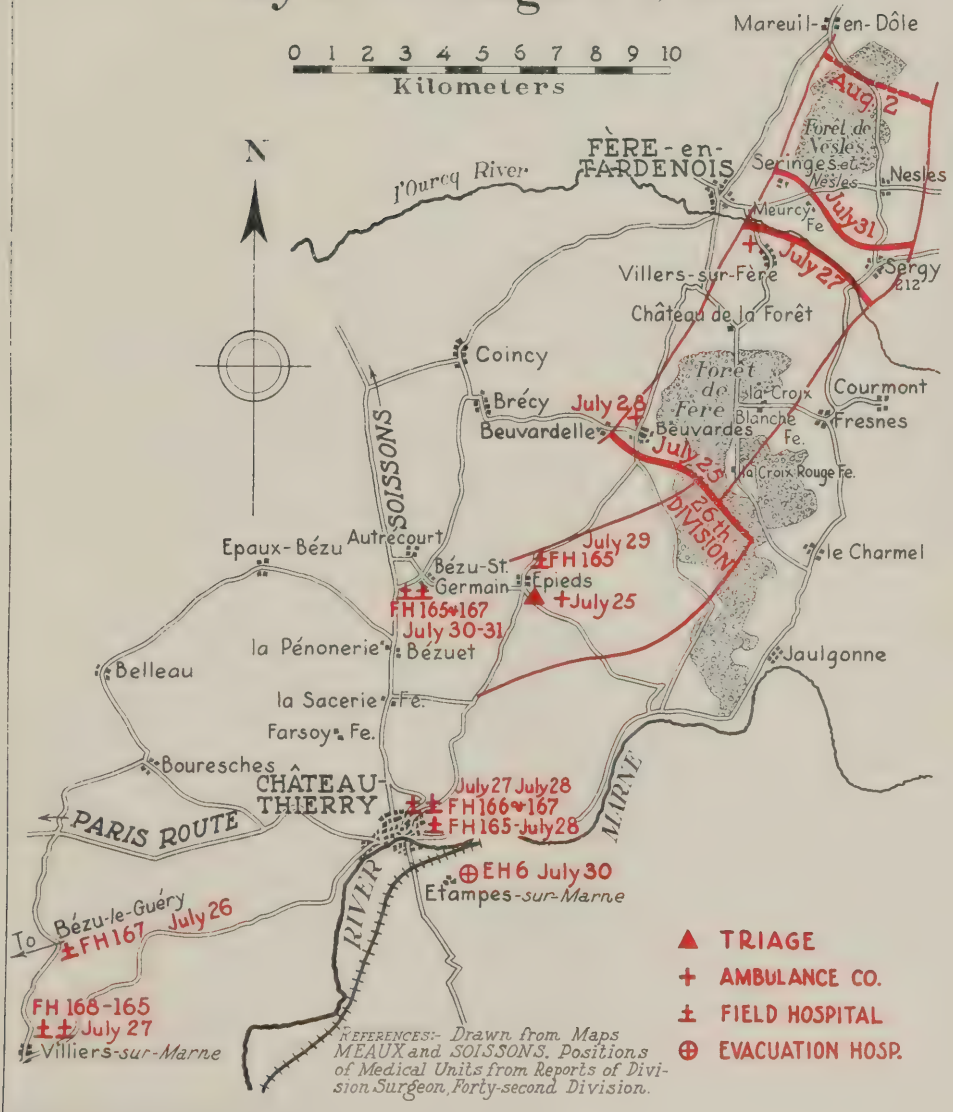
At 10 a. m. on July 25 a dressing station was opened at Epieds, when a few patients came in at once, but it was not until after nightfall that they arrived in considerable numbers. As Epieds was on the axial road of the division and was well situated for the collection of the wounded from the whole front, the only dressing station operated by the 42d for several days was that located here. This station also functioned as triage—the first attempted by this division.¹⁰⁵

Whenever it was practicable to do so the personnel of this station was changed every 12 hours, but during very active periods this was impossible, though all four ambulance companies cooperated in its service.¹⁰⁶ Owing to the remoteness of the supply dumps, the large number of wounded, and the failure of some hospitals to exchange equipment, there was a shortage of litters and blankets.¹⁰⁶

The most noticeable defect in the evacuation service was inadequacy of contact between aid stations and dressing stations. Officers were ordered forward to connect with the regiments and battalions, but the policy of having one ambulance officer on duty with each regiment had not yet been adopted.¹⁰⁷ Ambulances ran continuously for 8 days and evacuated all wounded as soon as located. During the 14 days from July 25 to August 7, the 11 vehicles of one ambulance company transported 2,527 persons (including some litter bearers going forward) and traveled a total of 15,546 miles.¹⁰⁷ This activity was typical of all. Each company employed its drivers under a system of shifts providing 16 hours on duty and 8 hours off.¹⁰⁷

United States Army Ambulance Service Section No. 502 was assigned to the division, but many of its cars were in poor condition, thus restricting the value of its service.¹⁰⁷ An evacuation ambulance company was ordered to the service of the division, but was two days late in arriving and was then assigned to work in rear of the field hospitals. Trips in this circuit varied in length from 33 to 140 km. (20.4–86.9 miles).⁹¹ The divisional ambulance service was thus thrown largely on its own resources for intradivisional work, which required the evacuation of a total of 5,596 patients.¹⁰⁸

Toward the end of the first day patients accumulated in such numbers at the front that evacuations by ambulance from Epieds were stopped, and by midnight approximately 400 patients were in and around the station at that place.¹⁰⁸ At this time every motor ambulance was working in advance of Epieds behind the front. Many of the wounded were in a serious condition, but it was decided that clearing the aid stations—in many cases badly overcrowded and subject to shell fire—was of first importance.¹⁰⁸ For the service in rear of this station ration trucks were employed and sitting cases transported to Chateau-Thierry.¹⁰⁸ A station for the slightly wounded was opened at Bezuet, where ambulance company reserves were stationed. To this point patients were transported from Epieds by the animal-drawn ambulance company hitherto held in reserve. As soon as congestion at the front was relieved, division ambulances again evacuated to the rear.¹⁰⁸



Battle lines, taken from existing orders and maps, are approximate.

On July 28, as a result of the attack against Sergy, there was another great influx of wounded. In this emergency the light trucks of the 149th Machine Gun Battalion rendered valuable service by evacuating many wounded from Sergy to Epieds.¹⁰⁸ On the same day, the line being advanced, a relay dressing station was established at Beuvardes. As a collecting point this station was poorly located, for it lay between an ammunition dump and a signal station, both under constant shell fire.¹⁰⁸ After 36 hours it was withdrawn: it had then become apparent that it was of no particular value.¹⁰⁸

Following the capture of Sergy, Seringes, Nesles and Fere-en-Tardenois, the line moved forward rapidly, clearing the Nesles—Fere-en-Tardenois road.¹⁰⁹ The battalion aid station cleared or gained this road, which then became the logical evacuation route leading to Fere-en-Tardenois. A dressing station was opened at Villers-sur-Fere, where it operated until August 3.¹⁰⁹

During this engagement every available litter bearer from ambulance companies had been sent forward to aid the sorely pressed regimental bearers, overwhelmed by the number of patients and the long carries. Six officers belonging to ambulance companies also were ordered forward to assist battalion surgeons.¹⁰⁹

When the division was relieved, on August 3, the field had been cleared; 4,408 patients had been evacuated in eight days. Two ambulances were then assigned to each Infantry regiment to care for the sick, who now began to appear in considerable numbers. Twelve ambulances were assigned to the 4th Division for temporary duty, when this division relieved the 42d. The remaining ambulances were kept busy for another five days evacuating patients from field hospitals to mobile and evacuation hospitals or to hospital trains.¹⁰⁹

FIELD HOSPITALS

The field hospital section of the 42d Division arrived at Luzancy on July 23.¹¹⁰ From this point Field Hospital No. 165 moved to Villiers-sur-Marne on the 27th, and thence on the day following to Chateau-Thierry, where it opened in a park near the Jean Mace School and received gassed patients. On July 29 it turned over its apparatus and standing tentage to Field Hospital No. 126 of the 32d Division, and advanced to Epieds to relieve the crowded dressing station there to perform triage duty and to care for slightly wounded patients. The next day, as the line was advancing rapidly, it moved to Bezu-St. Germain and began operating at once.¹¹⁰

Field Hospital No. 168 moved on July 27 to Chateau-Thierry, there taking over a site in an old convent building shortly before utilized by the Germans as a hospital and capable of accommodating 500 patients. Within 4 hours the building had been cleaned and equipped, 350 patients had been admitted, and five operating teams were at work. Within 12 hours the hospital was crowded to the limit of its capacity. A mobile hospital ordered to serve the division had been held at Coulommiers and, as a result of this the divisional hospitals, especially Field Hospital No. 166, in addition to their normal duties, had to perform for a few days those usually discharged by mobile or evacuation hospitals. As they filled rapidly when evacuation

was obstructed, Field Hospital No. 166 here performed more surgical operations than are usual for a divisional hospital.¹¹⁰

Field Hospital No. 167 moved on July 26 to Bezu-le-Guery to relieve a field hospital of the 28th Division operating there;¹¹⁰ thence, on July 28, to Chateau-Thierry and, on the 31st, to Bezu-St. Germain, where it received gas cases. This unit had been designated for gas service before the engagement and was especially organized and equipped for that purpose; but as a result of its activities at this time its arrangements were further developed into what proved to be their final character.¹¹¹

Field Hospital No. 168 moved on July 27 to Villiers-sur-Marne.¹¹⁰ After July 30, with two field hospitals at Bezu-St. Germain, one at Chateau-Thierry, and one at Villiers-sur-Marne, the ground was well covered, and there were no further changes in the location of these units until August 12, when the division moved out of the sector. The large number of casualties, with frequent moves necessitated by the rapid advance of the line, had required incessant labor and had demonstrated the fact that in open warfare extreme mobility was a most essential attribute for divisional hospital units.¹¹¹

EVACUATION

The problem of evacuation in this sector was replete with difficulties, and there were in consequence temporary accumulations of patients at the various stations.¹⁰⁶ One of these difficulties was due to the large number of wounded. A second difficulty was the relative inaccessibility, at first, of field hospitals, and a third was the distance to evacuation hospitals in rear of the division.¹⁰⁶ On the night of July 27, when delayed information was received that the division was about to attack, two field hospitals had been ordered to Villiers-sur-Marne to take over hospitals there, one had moved for the same purpose to Bezu-le-Guery, and only one was in a position to move forward.¹¹⁰ When, a little later, two of the field hospitals were in Chateau-Thierry, these quickly became overcrowded, and it was necessary to evacuate to Villiers-sur-Marne and to Neuilly on the outskirts of Paris,¹⁰⁸ rear evacuations varying in length from 33 to 140 km. (20.4–86.9 miles).¹⁰⁷ This delay in the forward movement of the field hospitals was due in part to the fact that evacuation units in rear of them had been delayed in clearing patients and moving up, that an inadequate number of evacuation hospitals was available, and because the field hospitals of the division had taken over patients from the division preceding them in the sector. However, by means of ambulances, trucks, barges, and later of trains with favorably located evacuation hospitals, the situation was rapidly ameliorated.¹¹¹

Certain conclusions reached by the division surgeon as a result of this operation were the following: (1) The triage or sorting station is indispensable and should be able to give extensive care to nontransportable patients; (2) a designated ambulance officer should be assigned to each regiment for liaison purposes and should at all times be on duty with it; (3) the divisional ambulances, if unaided by evacuation ambulance companies, are hopelessly inadequate to meet the needs incident to a severe engagement in open warfare.¹⁰⁹

THE 4TH DIVISION, JULY 28 TO AUGUST 12

The 4th Division, withdrawn from the French Sixth Army, came under control of the American First Corps on July 28 and assembled next day in Bois du Chatelet preparatory to entering upon the second phase of its activities in this area.⁵⁶

Two battalions of the 47th Infantry, placed at the disposal of the 42d Division, participated in the operation of July 30, crossed the Ourcq, and attacked Sergy, with losses amounting to about 50 per cent of their strength. The 39th Infantry, which relieved them on July 31, operated with the 42d Division until August 2.⁵⁶

During the night of August 1-2, the 4th Division moved to Foret de Fere and on the 2d made reconnaissance with a view to taking over the line held by the 42d Division.⁵⁶ On August 3 the 4th Division, as a division, took over a sector for the first time, its line running east and west through Foret de Nesles; the 7th Brigade on the left near Seringes and the 8th Brigade on the right near Nesles. During the night of August 3-4 and the following day the division advanced to the south bank of the Vesle, where it was held by intense enemy fire.⁵⁶ The Germans had begun to retreat and to withdraw to the line of the Vesle River, leaving rear guards, composed chiefly of well-concealed and efficiently manned machine guns, to prevent a too-rapid advance of allied troops. At the Vesle they had taken position in strongly entrenched lines, at St. Thibaut on the left bank, and at Bazoches on the right bank of the river. Upon the high bluffs on either side of the Vesle machine guns were placed advantageously for command of both towns, and from his vantage points the enemy had direct observation of the river and of the movement of allied forces.⁵⁷

In the face of strong opposition, one regiment of each brigade was pushed forward to the river, where, during the ensuing night, they were subjected to heavy gas attacks.⁵⁶ While American Artillery carried on interdiction and harassing fire in towns and crossroads north of the Vesle, the enemy retaliated with many high-explosive shells.⁵⁶ On the night of August 4-5 small detachments crossed the river, but progress was slow and difficult, the enemy offering strong resistance to all such attempts.⁵⁶ During the night of August 5-6 troops that had crossed were withdrawn to await artillery preparation.⁵⁶ On August 6 the Infantry, preceded by a barrage, advanced at 4.30 p. m.; the 58th Infantry, on the right, crossed the Vesle and reached the Soissons-Reims road, later repulsing counterattacks. On the left the 39th came under intense fire and was unable to cross, but next morning two of its companies succeeded in doing so.⁵⁶ During the day and night of the 7th, 8th, and 9th troops were heavily engaged in both offensive and defensive operations. They entered Bazoches, but were repulsed by airplane bombs and artillery and machine-gun fire.⁵⁶ On the 10th, in the sector of the right brigade, the line of the railroad north of the Vesle was held and patrols of the 59th Infantry were pushed to the front.⁵⁶ Except its Artillery brigade, which remained in action until August 17, the division was relieved by the 77th on the night of August 11-12.

In this operation the 4th had advanced the line to a depth of 9½ km. (5.8 miles).⁵⁶

MEDICAL DEPARTMENT ACTIVITIES

In this, the second phase of the 4th Division's activities, regimental surgeons, in general, were allowed to exercise their own initiative in locating their aid stations and in the distribution of their personnel. It had been found, as previously explained, that in any severe action this personnel, even when supplemented by details from the ambulance companies, was totally inadequate in numbers to clear the field of a regiment's casualties. In order to meet to a degree this emergency, the details from ambulance companies to regiments were made so large that the companies were reduced below the strength absolutely necessary for the prosecution of their work, and the consequence was a destruction of the efficiency of these commands, which had been especially trained for their peculiar duties. It was demonstrated, furthermore, that the ambulance men brought hurriedly to a new field of action could not work to their fullest efficiency when suddenly confronted by the unfamiliar conditions thus encountered.¹¹²

Bandsmen divided between the three battalions were distributed as litter bearers at whatever points their services were required. Frequently it was found necessary to establish relay stations between front-line aid posts and the battalion aid stations. It became evident that the regimental aid station could be replaced with advantage by the dressing station of an ambulance company, thus releasing the regimental surgeon and his personnel for more valuable supervisory and administrative work and facilitating liaison. Prior to this time the system in general use had been to have two enlisted men of the Medical Department with each line company and six men at each battalion aid station. Usually one medical officer was on duty at this station, while the other accompanied the advancing troops.¹¹²

In the early days of this offensive it was necessary to remove by litter all patients requiring litter transportation from the aid station to some point a kilometer (0.6 mile) or more to the rear which could be reached by ambulances.¹¹² As soon, however, as ambulances could evacuate directly from aid stations congestion of the wounded at these points was overcome. Aid stations were established in banks of earth, in abandoned cellars, or in dugouts, for there was no time to construct more elaborate shelter. These stations were small, poorly lighted, and with but little ventilation. The personnel on duty in them was continually exposed to gas brought in on the clothing of gassed patients, and their diminished numbers were reduced further by casualties occasioned thereby.¹¹²

SANITARY TRAIN

Rapid advance made difficult the efficient care and evacuation of the disabled from aid stations, though ambulance companies were brought up to keep in touch with the advancing lines.¹¹³ On July 24 headquarters of the sanitary train and Field Hospital No. 19 advanced to Crouy-sur-Ourcq, where a hospital was established in conjunction with a French triage already in

AISNE - MARNE OPERATION 4th DIVISION AUGUST 2-12, 1918.



Battle lines, taken from existing orders and maps, are approximate.

operation for the reception of the wounded.¹¹³ The other field hospitals remained at their former stations. On July 29, when the 4th Division was in the *Forêt de Fere* and *Bois du Chatelet*, Ambulance Company No. 19 advanced to *Epieds* and established a forward dressing station in connection with the triage of the 42d Division already in operation; this had been caring in part for wounded of the 4th Division.¹¹³ The numerous casualties which occurred among certain troops of the 4th Division when they were assigned temporarily to the 42d (July 30 to August 2) were cared for in the field hospitals of the latter division.¹¹³ Ambulance Company No. 19 also functioned as a triage and to August 3 evacuated about 540 patients.⁸³ Sanitary train headquarters then advanced to *Epieds* and Field Hospitals No. 19, No. 21, and No. 33 were ordered to *Epaux-Bezu* for station.¹¹³ Field Hospitals No. 19 and No. 33 opened for the reception of seriously wounded and sick and No. 21 was held in reserve. Simultaneously Field Hospital No. 28 was advanced to *Bezu-St. Germain* to receive gassed patients.¹¹³

The remainder of the ambulance section advanced on August 1 to *Epieds*. Two days later, the line having advanced rapidly again, the entire ambulance section was moved to *Villers-sur-Fere*, where a dressing station which functioned also as a triage was established. Because of continuous rains, bad road conditions, and deplorable lack of motor transportation, evacuations both from front and rear became impeded at this time. Ambulances were forced to evacuate all cases as far to the rear as *Chateau-Thierry*, *La Ferte-sous-Jouarre*, and *Coulommiers*, 30 to 50 km. (18.6-31 miles) to the south.¹¹³

On August 4 the entire ambulance section was advanced to *Mareuil-en-Dole*, where an advance dressing station was established. As the line became somewhat stationary along the *Vesle* casualties increased rapidly in number and severity, and to meet this condition the dressing station was expanded until it became a triage.¹¹³ Specially constructed shock rooms and a station for slightly wounded were added, and under the division medical gas officer a ward was equipped for the initial treatment of gassed patients. Here, also, the division psychiatrist maintained a ward for examination and treatment of war neuroses.¹¹³ In so far as was possible, collection, sorting, and evacuation of all cases directly to the proper hospitals were effected at this station. Continued rains made roads deep and heavy, thus causing delay and increasing the shock from which wounded were already suffering through exposure to cold and wet on the field. Except for intermittent shelling of surrounding roads, there was no firing or bombing of the village where this triage was established, but on account of the character of the terrain in the battle area and its exposure to incessant enemy fire many of the wounded remained on the field until darkness fell, in shell holes or under other slight cover.¹¹³

On August 6, 1918, all of the field hospital section advanced to *Chateau de la Forêt*, just south of *Fere-en-Tardenois*, where it was well concealed in a wood of the same name. The chateau was in good repair and served admirably as a hospital for nontransportable wounded, and there Field Hospital No. 19 opened for the reception of cases of this character.¹¹³ Ward tents were erected

in the grounds around the château, with Field Hospital No. 21 for neurologic cases, No. 28 for gassed cases, and No. 33 for the sick.¹¹³ The triage was transferred from the dressing station to the site of these field hospitals. Three additional surgical teams, two shock teams, and seven nurses were furnished by the corps.¹¹³ A portable X-ray plant was established. A very complete hospitalization center for the reception of sick and wounded was thus created. It was located on the main axial road, was accessible and within easy hauling distance from the front, was concealed from aerial observation, and completely free from danger, thus allowing its personnel to operate and work



FIG. 60.—Field hospitals of the 4th Division at Chateau de la Foret, August 10, 1918

without nervous strain other than that incident to fatigue.¹¹³ In accordance with orders, only truly nontransportables were operated upon here, viz, cases of hemorrhage, abdominal wounds, aspirating chest wounds, and severe compound fractures of the long bones.¹¹³ Here, too, was learned the economic lesson of holding all psychopathic cases instead of evacuating them to the rear. With complete rest in bed in a quiet area, sufficient food, and no treatment other than suggestive therapeutics, from 25 to 40 per cent of all cases of this character were returned to their organizations in from three to five days, well rested and restored.¹¹²

Patients were evacuated from this point by sections of the United States Army Ambulance Service and by the sanitary train of the First

Corps, which was now functioning. This train had joined the corps on August 9. The corps surgeon in his report emphasized the advantages consequent on the grouping of field hospitals, when tactically possible, through the saving thereby effected in personnel and transportation.¹¹²

The Medical Department of the 4th Division, which functioned for the first time as a unit in the operations toward the Vesle, learned from its new experiences the necessity for the following provisions: A selected, trained personnel of not less than 100 men with each regiment; discontinuance of the regimental aid station and its replacement by the dressing station of an ambulance company; relief of the regimental surgeon from all responsibility for evacuation to the rear of his battalion aid stations; increased motor transport for ambulance companies; treatment of all cases of shock by specially trained personnel before evacuation; facilities for giving, as promptly as possible, rest, heat, and morphine, as required, in the treatment of shock, hemorrhage, and depressed vitality due to exposure; facilities for the early treatment of gassed patients by undressing and bathing them at the battalion aid station if possible, or, if this were not practicable, at the dressing station; and advancement of the field hospital sections as far forward as possible, even to a point of some danger, in order to give the wounded the earliest possible rest and care.¹¹²

During the period from August 1 to 12 an epidemic of gastroenteritis occurred in which practically 80 per cent of the division was affected. This epidemic was fully described by a research committee appointed by General Headquarters and was found to be due entirely to lack of sanitary facilities.¹¹²

After 27 days had been spent in fighting and marching, the 4th Division moved to the Rimaucourt area for a period of rest, reorganization, and training.¹¹²

THE THIRD CORPS

The formation of the Third Army Corps was announced in General Orders, No. 102, General Headquarters, A. E. F., June 25, 1918.

The corps headquarters moved to Meux on July 12 and assumed administrative control over the 1st and 2d Divisions operating under the French Tenth Army. On July 15 the corps headquarters moved to Chateau Chanoye, and on the following day the advanced echelon moved to Taillefontaine.¹¹⁴ The corps surgeon's office remained with the 2d echelon at Chateau Chanoye.¹¹⁵

After the attack against Soissons, headquarters of the Third Corps was moved, on July 24, to Mortefontaine with the 1st and 2d Divisions, remaining there in rest until July 30, when it returned to the front. The 1st echelon remained at Mont St. Pere from August 1 to 5, with the 2d echelon installed in the little village of Gland.¹¹⁶ The 3d, 28th, and 32d Divisions were assigned to the Third Corps at this time, the corps commander taking over technical command from the French Third Corps on August 5, when the corps entered fully organized into the battle line and for the first time exercised tactical control of its front.¹¹⁷ The western limit of the corps's sector was: Villers-en-Prayeres (exclusive)—Barbonval (exclusive)—Blanzzy-les-Fismes (inclusive)—Perles (exclusive)—Mont St. Martin (inclusive)—Chery-Chartreuve (ex-

clusive)—Ferme de Camp (exclusive)—Sergy (exclusive)—Fresnes (inclusive)—La Croix Rouge Ferme—Maison Boutachs—Brasles—Chateau-Thierry (north bank exclusive)—Marne River from Chateau-Thierry to Azy. Eastern limit was: Concevreux (inclusive)—Roman (exclusive)—Huit-Voisins (exclusive)—Ormont Ferme (exclusive)—Courville (inclusive)—Arcis-le-Ponsart (inclusive)—eastern edge de Bois Dormont—Bois de Lanaux—Villers-Agron-Aiguizy (inclusive)—La Temple Ferme (inclusive)—Passy (inclusive)—Verneuil (inclusive). Dividing line between sectors of 32d Division (United States) and 4th Division (French): Maizy (to 4th Division)—Glennes (to 32d Division)—Baslieux-les-Fismes (to 4th Division)—St. Gilles (to 4th Division)—Longeville Ferme (to 32d Division)—Cohan (to 32d Division)—Coulonges (to 32d Division)—Roncheres (to 32d Division)—Barzy-sur-Marne (to 4th Division).¹¹⁷ The 3d and 28th Divisions were in rest billets in the rear.

A part of the French 4th Division, which had been occupying the right half of the sector, was relieved by the 6th Brigade of the 3d Division on August 6. On the following day the remainder of the French 4th Division was relieved by the French 164th Division. The latter was relieved from the Third Army Corps on August 13.¹¹⁸ On August 6 the 4th Division, as a part of the First Corps, and the 32d Division reached a line which was approximately that of the Vesle.¹¹⁸

MEDICAL DEPARTMENT ACTIVITIES

On August 1 the corps surgeon established his office at Gland.¹¹⁹ As long as the French division above mentioned remained in this sector, a matter of only two days, its evacuation and hospitalization plans were uninterrupted. Three field hospitals of the 32d Division were at Chateau-Thierry, and one, Field Hospital No. 128, was farther to the rear, receiving the sick at Azy. On August 2, Field Hospital No. 125 was advanced to Jaulgonne to act as a triage. Before this unit was installed there evacuation had been made to Juoy-sur-Morin and Coulommiers through a triage established by the 42d Division at Chateau-Thierry. Two of the field hospitals of the 3d Division were at Chierry, one farther to the rear and one at Mezy. Those of the 28th were at Brasles, or coming up from the rear. Evacuation hospitals had not then been placed at forward positions, and for a day or so field hospitals left behind by divisions withdrawing from the neighborhood of Chateau-Thierry received some gassed and some wounded. Although the army hospitals soon made evacuations to distant points unnecessary, for a short time it was necessary to make these as far back as Coulommiers. Hospital trains coming into Chateau-Thierry cleared the congestion in that town, and by August 4 both evacuation and hospitalization facilities were ample.¹¹⁹

The Paris group headquarters was in control of the sector until August 10, when organization of the First Army was officially accomplished and command of the Third Corps turned over to it. American Red Cross Hospital No. 111 arrived and was established in Chateau-Thierry August 10. Evacua-

tion Hospital No. 6 and Mobile Hospital No. 1 were established at Chierry on July 29. Evacuation Hospital No. 5 arrived at Chierry on August 2 and Evacuation Hospital No. 3 at Crezancy on August 5.¹¹⁹ As soon as the position of the battle line permitted, American Red Cross Hospital No. 110, Evacuation Hospital No. 4, and Mobile Hospital No. 2 were placed in well-chosen sites at Coincy, but this last addition to the evacuation service did not become effective until August 9.¹²⁰

The corps had no sanitary train until the latter part of August, when Field Hospital No. 332 and Ambulance Company No. 332 arrived at Gland to form the nucleus of such an organization. Being newly organized, they could do little more at that time than serve corps troops. All other evacuation service for the sector was performed by divisions direct to evacuation hospitals or by ambulance companies under the supervision and assignment of the Medical Department representative of the general staff with headquarters of the Paris group. Habitually these units were attached to the different evacuation hospitals as occasion required. During part of the time evacuation was effected to a certain extent by canal boats and barges, which also operated under the supervision of the above Medical Department representative. During the first few days most of the wounded in the corps came from the 32d Division, the only part of the 3d Division then in line being the Artillery. By August 2, Field Hospital No. 125, of the 32d Division, was established at Jaulgonne to function as a triage and to receive nontransportable wounded. By August 4, a field hospital (No. 127) was placed at Reddy Ferme and Evacuation Hospitals No. 5 and No. 6 established at Chierry and Etampes.¹²⁰

THE 3D DIVISION

From July 16 to 19 the 3d Division remained in its sector on the Marne, with the right flank regiment facing to the east as a measure of protection against the German line which had crossed the river. On the morning of July 20, three French divisions attacked this line, only to find that the enemy had retired to the north side of the Marne during the preceding night. On the same day orders were received to assume the offensive and cross the river. Material was prepared and bridges built during the night of July 20-21. A part of the Infantry had managed to cross the river in boats. By the 22d, the 3d Division was well across and had its leading elements above the towns of Jaulgonne, Chartevès, and Mont St. Pere.¹²¹

From the 22d to the evening of the 25th very bitter fighting took place on all the wooded slopes leading up to the town of Le Charmel. By evening of that date American troops had fought their way, little by little, into the town, and on the following morning were in possession of the first crest, parallel to the river and approximately 3 km. (1.8 miles) north of it. The Oureq was reached on July 26, and from that time until morning of July 30 the 3d Division, together with French units on its left, slowly advanced.¹²¹

The 3d Division was relieved by the 32d on July 30 and assembled south of Chateau-Thierry. On August 2, the 6th Brigade was dispatched to sup-

port the French Third Army Corps operating toward the Vesle. It was relieved from this duty on August 10 and rejoined the division, which had gone into the rest area near Gondrecourt.¹²²

MEDICAL DEPARTMENT ACTIVITIES

On July 22, the division surgeon's office moved from Viels Maisons, Seine-et-Marne, to Chateau la Dultre, remaining at the latter place until August 16. During the period which intervened the division surgeon was occupied chiefly in locating and inspecting hospitals, supervising the evacuation of the wounded, and inspecting the regimental medical service.¹²³ Sixteen men of the line had been selected from each battalion and trained in first aid and in litter bearing.¹²⁴ The division surgeon's other duties were those incident to replacement of casualties in the Medical Department, replacement of officers and men at the front who would have become incapacitated from exhaustion had they not been relieved from duty there, and provision of supplies.¹²⁵ Service of the medical supply unit, supplemented by the Red Cross representative, was such that medical matériel was ample throughout this operation. The supply officer collected property abandoned by formations as they moved forward, and one of the duties of the sanitary inspector was to determine whether medical units were fully equipped. Sanitation of the command was exceedingly poor, but this was cared for as far as the existing tactical situation permitted.¹²⁴

AMBULANCE COMPANIES

Headquarters of the ambulance section of the sanitary train was located at Verdelot from July 15 to 24, then moving to Crezancy, where it remained until August 14. It then moved to Bonnet.¹²⁵

On July 22, the division having crossed the Marne, Ambulance Company No. 5 advanced its dressing station from Essises to Blesmes, where it opened in a château. In the interval from July 15 to 22 this company evacuated approximately 2,700 patients, of which number more than half were recumbent cases. Over 2,000 of these patients were redressed or received antitetanic serum or other treatment at the main dressing station at Essises. On July 23 this company established an advance dressing and ambulance station at Jaulgonne, with 2 officers, 1 noncommissioned officer, and 10 enlisted men. It posted two ambulances at Le Charmel, one at a point 0.8 km. (one-half mile) northeast of Le Charmel, at the regimental aid station of the 76th Field Artillery, and one with the 4th Infantry post control at Villardelle Ferme.¹²⁵

Wounded were evacuated through the station at Blesmes to Field Hospital No. 27, at Verdelot, until July 28, on which date that unit moved to Chateau-Thierry. On August 2 the advance dressing station at Jaulgonne was withdrawn and on the following day a medical officer, with two ambulances of Ambulance Company No. 5, was detailed to make, each morning at 8 o'clock, the rounds of the 7th Infantry at Viffort; the 1st Battalion, 4th Infantry,

Battle lines, taken from existing orders and maps, are approximate.

and 8th Machine Gun Battalion, at Montharreaux; 2d Battalion, 4th Infantry, at Auclaine; 3d Battalion, same regiment, at Montlevon; 2d Battalion, 76th Field Artillery, at La Grande Bordeaux Ferme; 18th Field Artillery, at Nesles; 10th Field Artillery, at Les Evaux; 2d Battalion, 10th Field Artillery, near Chateau-Thierry station; and of 1st Battalion, 10th Field Artillery, at Mont de Blesmes.¹²⁵ At 4 p. m. every day two ambulances without an officer again covered this route. The service of these "sick call" ambulances was discontinued on August 7, and the 5th Company began to evacuate patients from Field Hospital No. 7 at Cohan to Evacuation Hospitals No. 3, No. 5, and No. 6. For three days a detail from this company assigned to Field Hospital No. 7 assisted it in this evacuation, but was withdrawn when that hospital moved, on August 11.¹²⁶ From July 22 to August 11 Ambulance Company No. 5 evacuated 1,860 patients and the medical department personnel suffered the following casualties: Killed, 2; wounded, 7 (of whom 2 died); gassed, 4. From August 12 to 15 the company remained at Blesmes awaiting orders, moving on the 16th toward Bonnet near Gondrecourt.¹²⁶

Ambulance Company No. 7 had established its main dressing station at Pertibout on July 15, but when the 3d Division assumed the offensive it moved on the 22d to Courboin and to Crezancy on the 24th. On July 31 and August 1 its dressing station was located at Jaulgonne; on August 3 at Roncheres. The next day the station here was closed and the company moved to Cohan, where, on August 5, it reestablished its dressing station. This was again moved, the same day to Dravegny and the next day to Arcis-le-Ponsart.¹²⁶ From time to time throughout this period the company furnished litter bearers to regiments. In the interval from July 15 to August 8 Ambulance Company No. 7 evacuated 3,627 patients and experienced 1 fatality and 15 other casualties among its personnel.¹²⁶ On August 11 the company closed its dressing station, and then moved to a rest area with the remainder of the division.¹²⁷

Ambulance Company No. 26, stationed at Verdelot from July 15 to August 1, left that location on the latter date and moved to Courboin, where on August 7 it established a dressing station.¹²⁶ It remained there until it left the sector on August 16, meantime keeping one ambulance in the routine service of the 4th Infantry and another for the 7th. During this period five of its men were wounded in an air raid.¹²⁸

Ambulance Company No. 27 was stationed at La Ferotterie from July 15 to 20, all of its available ambulances evacuating from Field Hospital No. 27, at Verdelot, to Field Hospital No. 26, at Coulommiers, and to Army Red Cross Hospital No. 107, at Jouy-sur-Morin. From July 21 to 29 it was at Verdelot, its ambulances operating as before; and from the latter date until August 16 it was at Chierry, its ambulances evacuating from neighboring points into Field Hospital No. 27 and also from that unit into others farther to the rear.¹²⁸ United States Army Ambulance Section No. 524 was employed to evacuate the wounded from dressing stations to field hospitals and proved an important supplement to divisional resources.¹²⁷

FIELD HOSPITALS

Headquarters of the field hospital section was located at Verdelot from July 15 to 30, and thereafter at Crezancy, remaining in this location until August 16.¹²⁵

Field Hospital No. 5, at Ville Chamblon, received gassed cases of the 3d Division, but only a few of these cases were severely affected. Most of those first received were suffering from intoxication by gases which induced sneezing or vomiting; later casualties were attributed to phosgene and, when the enemy began his retirement, to mustard gas. On July 31 the hospital was bombed by a low-flying airplane, 6 men being hit, 4 of whom were killed. This unit was located at Mezy on August 1, but because of air raids it moved to a position on the St. Eugene—Crezancy road, 1½ km. from Crezancy, remaining in this location until August 16.¹²⁹

On July 21, Field Hospital No. 7, which had been stationed at Chateau Villiers, near St. Barthelemy, was moved to Ville Chamblon, and on July 27 to Courboin, where it remained until August 5, receiving gassed patients at both these locations. It then moved to Cohan, where it operated a field hospital until August 11, when it returned to Courboin. On August 16 the unit began its movement toward the Gondrecourt rest area.¹³⁰

Field Hospital No. 26, at Coulommiers July 15 to 25, acting as divisional evacuation hospital, admitted 1,157 patients.¹³¹ It then moved to Verdelot, where it received 300 neurotic, sick, and venereal patients. From August 1 to 13 it was established at Chierry, in connection with Field Hospital No. 27, admitting 569 patients of the same class as those it had received at Verdelot;¹²⁹ but at Chierry, because of an epidemic of dysentery, 350 cases received were medical. On August 13 this unit turned over its patients to Evacuation Hospital No. 5, located in the same town, and began preparations for a move to the rest area.¹³¹

Field Hospital No. 27 operated at Verdelot until July 28, receiving patients from the 3d and other divisions. Of the 4,512 cases admitted between July 15 and 28, about 75 per cent came from the 3d, the remainder from the 26th Division.¹²⁹ Cases received included nontransportables, slightly wounded, scabies, genitourinary, war neuroses, sick (other than contagious), and some gassed patients. This unit also served as the triage hospital, recording all admissions and evacuations. From July 28 until August 16, Field Hospital No. 27 was located at Chierry, operating there most of the time as a triage and as a camp hospital.¹²⁹ During this period it received 645 patients, including nontransportables, slightly wounded, and miscellaneous medical cases, especially those suffering from an acute enterocolitis of infectious origin. This unit temporarily assimilated Field Hospital No. 26, including its personnel and equipment.¹³²

The principal evacuation point for all the field hospitals of the 3d Division, was Chateau Montanglaust, near Coulommiers, where Evacuation Hospital No. 7 and Mobile Hospital No. 1 had been established on June 12. Army Red Cross Hospital No. 107 was stationed at Jouy-sur-Morin near La Ferte-

Gaucher from June 15 to August 11, when much of its personnel and material were transferred to the newly organized American Red Cross Hospital No. 111 at Chateau-Thierry. The first mentioned of these places was 20 km. (12.4 miles) to the southwest of Ville Chamblon and some 30 km. (18.6 miles) or more from the line of the Marne.

On August 16 the sanitary train proceeded to Bonnet, near Gondrecourt, for rest and training.¹³³

THE 32D DIVISION

The 32d assembled near Soissons on July 26 as a reserve of the French Tenth Army, but immediately moved to the vicinity of Chateau-Thierry, where it entered the French Thirty-Eighth Corps of the Sixth Army.¹³⁴ On July 29-30, it relieved the 3d Division in the vicinity of Roncheres on the Ourcq, and on August 4 passed under control of the American Third Army Corps.¹³⁴ The commanding general of the 32d Division assumed control of the front, in the sector occupied by his division, at 11 a. m. on July 30; at 2.30 p. m. of the same day an attack was launched which took Bois de Grimpettes and the edge of Bois de Cierges. The 28th Division on the left advanced to the edge of Cierges. On the night of July 30-31 the 28th Division, on the Ourcq, was relieved by the 63d Brigade of the 32d, thus extending the front of the 32d Division to the left toward Sergy. On July 31 the village of Cierges was captured. Strong resistance at Reddy and Bellevue Fermes stopped the advance, but the enemy was forced to abandon the latter position next day, when American troops gained Bois de la Planchette and Hill 230. The German forces now withdrew rapidly, and on August 3 the 32d Division reached the hills overlooking the valley of the Vesle.¹³⁴ The following description of the offensive from this point is taken from the report of the division commander:¹³⁵

About midnight of August 3 an order was received from the corps commander to press forward with all possible haste to the Vesle River and to provide means, if possible, for crossing the river * * *. The order contemplated the capture of Fismes with the right column and the railroad yards and large ammunition dumps in left of sector by the left column. When the columns moved forward they met with stubborn resistance and failed to reach the river. * * *

The two columns again pushed forward at night. The left column, upon reaching the river, succeeded in getting two small patrols across, but they could not maintain themselves there and were driven back. The right column attempted to enter Fismes, but met with a determined resistance by a considerable force. They held to a position south of the village; but the next day, after artillery preparation, Fismes was taken by assault and held by our troops. During these operations along the south bank of the river, covering a period of three days, fighting was severe and very difficult. * * *

The casualties sustained by my Infantry in these two days according to the best information (August 10) available approximated 2,000 in killed and wounded, and, upon inquiry by the corps commander (Third United States Corps), I gave it as my opinion that my troops were too much exhausted and too depleted to make further attempt for an immediate crossing. He thereupon gave the order for the relief of my division by the 28th United States Division during the night of August 6-7, which was accomplished in accordance with the order.

MEDICAL DEPARTMENT ACTIVITIES

Litter bearers serving with the regiments were reinforced by details from the line and from ambulance companies and by bandsmen. Awaiting developments of the attack, eight motor ambulances were assigned to each infantry brigade and four horse-drawn ambulances to the artillery. When the attack commenced, dressing stations were established as far forward as possible and ambulance heads pushed out in front of them as circumstances indicated. Aid and dressing stations were advanced as required by troop movements. This offensive demonstrated the need of better contact between battalion aid stations and the ambulance companies and also that the Medical Department be furnished good maps, with prompt information concerning troop movements.¹³⁶

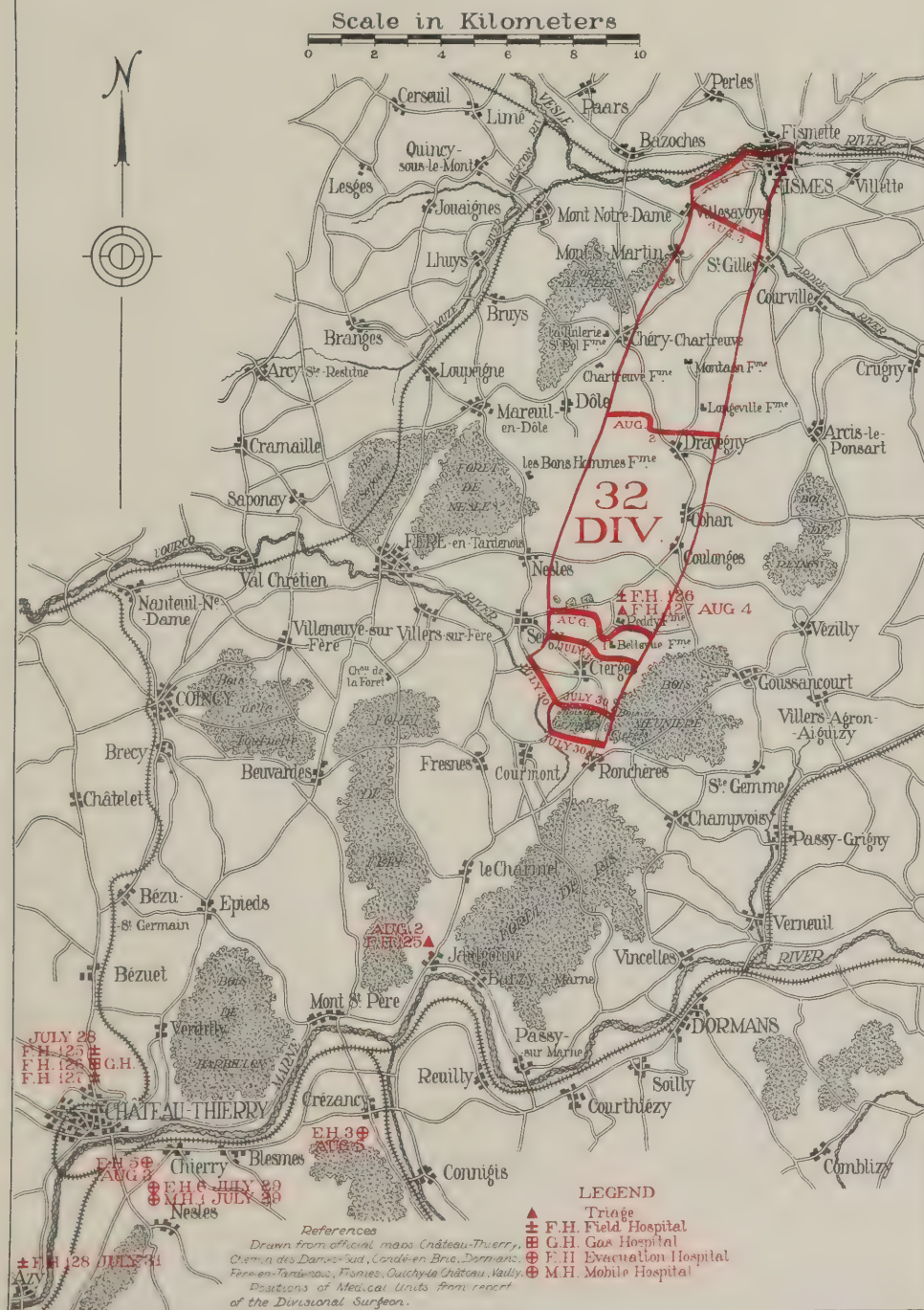
Regimental and battalion aid stations were located near their respective control posts, in cellars, dugouts, or behind protecting embankments. In some instances regimental aid stations were operated in the immediate vicinity of advanced dressing stations established by ambulance companies. Medical Department personnel as reinforced by bandsmen and details from ambulance company litter bearers was adequate except in a few emergencies.¹³⁷

SANITARY TRAIN

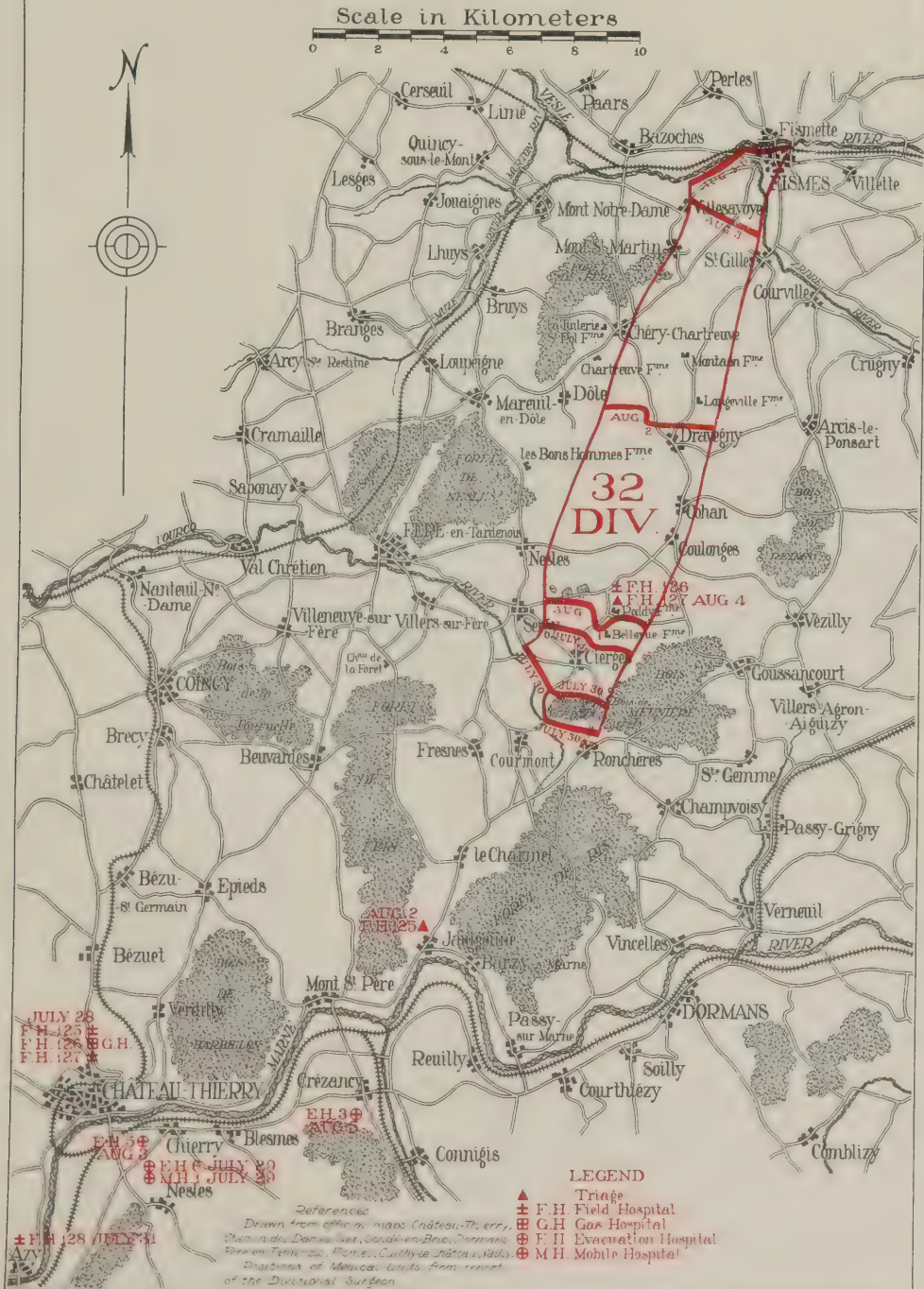
From advance stations to the field hospitals Medical Department transportation proved adequate, except that on a few occasions between the dressing stations and the field hospitals trucks of the supply train were utilized, as well as some belonging to the sanitary train. On July 28 and 29 the sanitary train furnished 19 ambulances for the service of other divisions. None of its motor ambulances was out of service during this time except occasionally for very brief periods while undergoing necessary repairs.¹³⁸

This movement to the Ourcq was so rapid that the division was in action before its rear medical formations had established themselves and had begun to operate, for which reasons during its early activities it was assisted by medical department units of the 42d Division previously in action here.

As evacuation from the front was toward Chateau-Thierry, the triage for the 32d Division was at first operated by Field Hospital No. 166 of the 42d Division, which was not in a position to leave the sector when the 32d arrived, some of the wounded of the 42d being still in its wards.¹³⁶ Field Hospital No. 125, at first in reserve near Chateau-Thierry, had been established and was in operation on the night of July 31, when its immediate vicinity was bombed and it was sprayed by machine-gun bullets from an airplane.¹³⁸ On August 2 it was established at Jaulgonne, where it operated the triage and received nontransportable wounded. Its patients were received from 5 to 24 hours after they had been hit. In only a few cases was the administration of antitetanic serum indicated here, because of its omission further forward, but, generally speaking, readjustment of splints and dressings of the slightly wounded was necessary. Patients suffering from fractures, large shell wounds, or wounds of the chest or abdomen suffered greatly from shock, and



Battle lines, taken from existing orders and maps, are approximate.



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despite liberal use of blankets their vitality became much lowered during transit from the dressing stations to this hospital. During this operation this unit admitted 312 slightly wounded patients, 181 seriously wounded, 140 slightly gassed, 32 severely gassed, and 7 sick. At Jaulgonne it buried 36 dead and returned 31 casualties to the division.¹³⁸

Field Hospital No. 126 opened under tentage on July 28 in Chateau-Thierry, functioning as an overflow ward for Field Hospital No. 165 of the 42d Division, located near the Jean Mace School. Next day it took over the equipment and standing tentage of that unit and operated until August 7, receiving gassed, exhausted, and psychoneurotic cases.¹³⁹ Its bed space, originally 200, was later expanded to 300 by taking over empty wards in the Jean Mace School.¹⁴⁰ In addition to the overflow mentioned, of the 42d Division, it received 757 patients from the 32d Division, classified as follows: Slightly gassed, 27; moderately gassed, 369; seriously gassed, 101; psychoneurotic, 90; wounded, 77; sick, 57; exhausted, 20; injured, 16.¹³⁹ About 10 per cent of these cases were transferred to Field Hospital No. 128 to be returned shortly to the ranks. All gassed cases were bathed, but on account of shortage of water and the exhaustion of bathing squads, this practice was later modified, and only selected cases were bathed and given special treatment of mouth and eyes.¹⁴⁰ Cases were kept from 2 to 24 hours, an average of 10 hours, the period of detention being determined by evacuation facilities. As evacuation hospitals were well to the rear, trucks were used as conveyances to them, supplemented on the last day of activity in this sector by an evacuation ambulance company.¹⁴⁰ The unit moved later to Reddy Ferme.

Field Hospital No. 127 reached Chateau-Thierry on July 28, and until August 1 operated in conjunction with Field Hospital No. 166 of the 42d Division in the Jean Mace School, but by noon of the latter date it began to receive patients from the 32d Division.¹⁴¹ The unit here had a bed capacity of about 500 and an operating capacity of 80.¹⁴² Prior to August 3 it received 113 wounded patients and operated upon 21.¹⁴¹ On August 4 the hospital moved to Reddy Ferme, where it functioned as a triage and received non-transportable and gassed cases.¹³⁶

Field Hospital No. 128 moved to Azy, opening there on July 31 and receiving 409 sick, 43 gassed, 45 psychoneurotic, 50 injured, and 17 wounded patients. On August 14 it moved to Barzy-sur-Marne.¹⁴³

At the close of this offensive Field Hospital No. 125 was in reserve at Jaulgonne, Field Hospitals No. 126 and No. 127 at Reddy Ferme, and No. 128 at Barzy.¹⁴⁴

The position of these hospitals at the beginning of this operation approximated what was called in this division the "diamond formation," which it employed whenever practicable. According to this plan one hospital, advanced as far forward as possible, acted as a triage and cared for nontransportable wounded. Two other hospitals, farther to the rear, cared for gassed and slighter surgical cases, respectively, while the fourth, yet farther to the rear, took over such cases as would be fit for return to duty in a few days.¹⁴⁵

Based on its experience in this campaign, the division developed what was practically a separate triage unit, composed of officers and enlisted men selected from all the field hospitals. This group was engaged solely in the examination, sorting, and registration of patients.¹⁴⁵ Every six hours it sent by courier to the division surgeon a report of its activities, thus enabling him to give the division commander a daily statement of casualties, showing the number of wounded admitted, the organizations to which they belonged, and the missiles causing the wounds. This report was thus of some value to the division commander in determining the tactical situation. As the triage operated continuously, the group conducting it was divided into two shifts.¹⁴⁴

Almost all the wounded of the 32d Division passed through its own field hospitals, though a few were cared for in the hospitals of other divisions. Hospitals of the 32d treated approximately 40 per cent of casualties admitted and operated upon 358 patients. They evacuated 60 per cent of those received direct to evacuation hospitals or to hospital trains.¹³⁶

At the commencement of this offensive evacuations from the 32d Division were through the triage operated by Field Hospital No. 166 of the 42d Division at Chateau-Thierry and hospitals of the 32d established in the same place. From Chateau-Thierry patients were sent to Army Red Cross Hospital No. 107 at Jouy-sur-Morin and to Evacuation Hospital No. 7 and Mobile Hospital No. 1 at Coulommiers.¹³⁶ From July 28 to August 2, when patients were being sent to Coulommiers, the haul was so long that evacuation was unsatisfactory. After Field Hospital No. 125 was established at Jaulgonne, to serve as a divisional triage and receive nontransportable wounded, evacuations to Coulommiers continued, though some patients were sent by train direct from Chateau-Thierry. After August 4, evacuations were made to Evacuation Hospitals No. 5 and No. 6 which had been established at Etampes and Chierry, about 2 km. (1.2 miles) distant from Chateau-Thierry. Thereafter, with two evacuation hospitals close at hand, with hospital trains in service and barges on the Marne available as required, evacuation facilities were ample.¹³⁶

Methods for using motor trucks of the field hospital train for evacuation purposes were considerably developed in this campaign. Trucks were arranged to carry 12 recumbent patients, 6 longitudinally on the floor and 6 transversely on litters which were lashed by litter slings to the hooks on the side boards of the truck which normally engaged the fastenings of its canvas cover.¹⁴⁵ Provisions were made also by which a truck could carry 24 sitting patients. Thus equipped, these vehicles were reasonably comfortable on fair roads and their use prevented the congestion that otherwise would have occurred. They were used especially between the field and evacuation hospitals, thus relieving the ambulances in this circuit of all but the graver cases.¹⁴⁵

Because of the tactical situation, sanitary conditions throughout this operation were very unsatisfactory. Every shell hole was polluted, bodies lay undiscovered and unburied for days, and flies were incredibly numerous. Not a mouthful of food escaped their visits. To these insects were attributed enteric diseases which attacked almost all of the division at this time.¹⁴⁴

THE 28TH DIVISION

The 28th Division, which had been operating in support of the French and furnishing a number of small elements for front-line service, entered the advance line as a unit on the night of July 27-28, the 55th Brigade relieving the French 39th Division and the 56th Brigade was in reserve in the Bois Vente Jean Guillaume. Bridges were constructed across the Ourcq by the engineer troops, and the 55th Brigade advanced in the face of sustained and severe machine-gun and artillery fire. On July 30, with the 32d Division, it attacked through Grimpettes Wood and reached Cierges, but on account of gas the town was not occupied and the line was established on the high ground just south of the town. The 28th Division was relieved on the night of July 30-31 by the 32d.¹⁴⁶

MEDICAL DEPARTMENT ACTIVITIES

AMBULANCE COMPANIES

Headquarters of the ambulance company section moved from Le Rousset to Chateau-Thierry on July 24, and thence on August 11 to Cohan. With it moved the motor repair park and an ambulance subsection of the medical supply unit maintained to expedite supply of the dressing stations.¹⁴⁷

Ambulance Company No. 109 moved, on July 26, from Le Rousset to Chateau-Thierry, where it remained until August 13. From that point its personnel was sent out as litter squads to a number of advance points—Le Charmel, Fresnes, Courmont, Cierges, and Roncheres—to aid infantry units. From July 29 to 31 it maintained a dressing station at Mont St. Pere.¹⁴⁸

Before the allied counteroffensive began, Ambulance Company No. 110 had moved with the 55th Brigade of the 28th Division to Charly, but on July 27 returned to Artonges, where it had operated during the German offensive. On the same day it opened at Mont St. Pere a dressing station which it operated until July 29.¹⁴⁹ From that date this company was occupied exclusively in evacuating the wounded to a dressing station at Le Charmel operated by Ambulance Company No. 111, thus relieving a United States Army Ambulance section which had previously performed the evacuation in question. While at work in this area ambulances made frequent trips to the Ourcq, 6 of these vehicles evacuating 620 patients in 12 hours. On August 3 the company moved from Le Charmel and established, on the 9th, a dressing station at Chery-Chartreuve which it operated until August 13.¹⁵⁰

Ambulance Company No. 111 moved on July 22 to Chateau-Thierry, where it opened a dressing station, a detachment from the company setting up another station at Charly. On July 24 the company moved to Bezu-St. Germain, where it maintained, until July 28, a dressing station which cared for wounded from the 26th, 28th, and 42d Divisions; from this point the company moved to Le Charmel, where it operated a dressing station until August 3. During the period from July 29 to 31, inclusive, this station cared for 2,481 patients.¹⁵¹ On August 3 it was moved to Dravegny, where it remained until the 13th, serving the 32d and 28th Divisions, and the artillery

stationed between Dravegny and St. Gilles. An advance dressing station established at the latter place on August 8 had to be abandoned next day because of shell fire, but ambulances continued to evacuate from that point. This station was reestablished on August 12, although it continued to be harassed by artillery fire. The remainder of the company, which moved to Courville on the 12th, had similar harassment from enemy fire.¹⁵²

Ambulance Company No. 112 was ordered, on July 21, to Chateau-Thierry, where it opened a dressing station and for the first 24 hours performed what was virtually the work of a battalion aid station, having preceded the infantry of the division. Patients began to arrive before the station was fully established, and many were brought in from different parts of the town. Shelling and gas attacks continued heavy and interfered con-



FIG. 61.—Entrance to dressing station, operated by Ambulance Company No. 111, 28th Division, near St. Gilles, France, August 15, 1918

siderably with its work.¹⁵³ The station was well located, however, and cared for disabled of the 1st, 3d, 26th, 28th, and 32d Divisions, as well as for numerous French wounded. Meantime litter details operated with the 112th Infantry in the field. Ambulances cleared the triage—Field Hospital No. 112—established here on July 25, which cared for wounded of the troops mentioned above, and also for those of the 42d Division.¹⁵⁴ On August 12 the company moved to Cohan and remained there until the 20th. Evacuation from the triage was taken over partly by its ambulances, and a dressing station was operated at Mont St. Martin.¹⁵⁴

FIELD HOSPITALS

Field Hospital No. 109 was moved from Marlande to La Ferotterie on July 17 and prepared to receive wounded in a deserted school building and in tentage erected for the purpose;¹⁵⁵ but as no patients arrived, it moved

on July 21 to Rieux, in the vicinity of Montmirail, where it opened again in Chateau Lamartine and its adjoining grounds. It was joined here by operating teams.¹⁵⁶ Four days later the unit moved to Charly, receiving there its first patients, 10 in number. It was as yet operating in reserve. On July 30 it moved toward Le Charmel, but as that point was undergoing heavy bombardment it did not enter the town until next day.¹⁵⁷ It operated here as a triage until August 7; then, as its distance behind the front was increasing, it moved to Cohan, where for a month it operated a triage in the church building, which proved well adapted to the purpose.¹⁵⁸

On July 16, Field Hospital No. 110 received orders to move to Fontaine Tige, where Field Hospital No. 111 had already opened. On and after July 22, it sent 3 officers and 59 men to assist Field Hospital No. 112 at Chateau-Thierry. The remainder of the unit moved to Chateau-Thierry on August 2 and on the 4th to Courmont, caring at the latter place for gassed and psychiatric cases.¹⁵⁹

Field Hospital No. 111 was established on July 12 at Fontaine Tige, there equipping a vacant house and pitching tentage for the treatment of shock and surgical cases.¹⁶⁰ The first patients arrived July 16, and the hospital continued to function actively until August 8. On the latter date it was moved to Jaulgonne, but not finding a suitable location for a hospital, proceeded next day to Courmont, nearing the advancing division. At Courmont it set up 15 tents and began to receive patients at once.¹⁶¹

Field Hospital No. 112 opened on July 16 on the grounds of a château near Artonges, camouflaged its tents, and improvised baths.¹⁶² At this point it received only 59 gassed patients, evacuating these to Fontaine Tige.¹⁶³ On the 24th it moved to Chateau-Thierry and occupied the partly ruined buildings of the Hotel Dieu.¹⁶⁴ While there its personnel was supplemented by details from outside sources; i. e., medical officers, surgical, shock and X-ray teams, and 32 nurses. It received slightly and seriously wounded patients.¹⁶⁵ On August 9 the unit was relieved by Red Cross Hospital No. 111 and moved to Cohan.¹⁶⁶ There it expanded rapidly, developing from a triage into a hospital of more than 300-bed capacity. Evacuation was effected by ambulances, trucks, trains, and barges to Coulommiers, Coincy, Jouy, Cocherel, and Paris. The functions of Field Hospital No. 112 at this point were those of triage, and of a surgical and an evacuation hospital.¹⁶⁷

MEDICAL DEPARTMENT SERVICE IN REAR OF THE DIVISIONS

At suitable points in the foregoing text allusions have been made to the arrangements for care of the disabled in rear of the divisions, but in order that a more comprehensive idea of such service in the Marne area may be gained by the student, what follows has been abstracted from the report of the chief surgeon of the troops operating there, the Paris group. So much of his report as pertains to provisions made in the operation against Soissons has, however, already been given almost entirely in connection with the histories of the 1st and 2d Divisions there engaged, and this need not be repeated here.

During the Soissons operation, evacuation hospitals in the vicinity of Chateau-Thierry and in rear of it retained their former locations. Although the railhead at Crepy-en-Valois was given priority rights in obtaining hospital trains, enough were available for the hospitals at other points to insure a reasonable number of vacant beds to meet sudden emergencies.¹⁶⁸ On the morning of July 20 all wounded were cleared from the field hospitals in preparation for the offensive which was slated for 3 p. m. on that date, yet by 2 p. m. of the following day Evacuation Hospital No. 7, at Chateau Montanglaust, was nearly full.¹⁶⁹ Information was received that the 42d Division had arrived and that the 32d would enter the area at an early date, but attempts to ascertain their probable destination with a view to locating evacuation hospitals to the best advantage were unsuccessful. Nevertheless, arrangements were made to have an evacuation hospital established at Meaux and another at Chateau Perreuse, near La Ferte-sous-Jouarre.¹⁶⁹ Medical units were assigned as follows: Evacuation Hospital No. 4, which reached its destination on July 22, to Chateau Perreuse; Evacuation Hospital No. 6 to Meaux, where it arrived July 20; and Mobile Hospital No. 2 to Chateau La Trousse, near Lizy-sur-Ourcq, where it arrived July 23.¹⁶⁹

On the 22d, the chief surgeon, district of Paris, reported that the hospitals in Paris were full and that he was unable to secure trains to evacuate them.¹⁶⁹ The situation was further complicated by the fact that there were still 1,000 patients awaiting evacuation at Crepy-en-Valois and the evacuation hospitals at Montanglaust and Jouy-sur-Morin were running to capacity; but with 800 vacant beds at Juilly, despite the long haul to that point it appeared that the situation could be met, especially in view of the arrival of the hospitals mentioned above.¹⁷⁰ Evacuation Hospital No. 6 was ready to receive patients on the 22d and promptly admitted a large convoy direct from the front. During the following night another convoy was sent to Evacuation Hospital No. 4, for the 26th Division had suffered many casualties, and its wounded were coming to the rear in trucks as well as in ambulances. As our divisions were advancing, forward areas in their vicinity were inspected for hospital sites nearer the front, and barge evacuation on the Marne received consideration for the first time. By July 24 hospital trains were again available.¹⁷⁰

From July 16 to 24, Evacuation Hospital No. 7 evacuated by train 8,689 patients, several hundred of whom had come from the Red Cross hospital at Jouy-sur-Morin.¹⁷¹ From July 17 to 24, Evacuation Hospital No. 8, at Juilly, sent out 1,199 patients and the hospital at Jouy-sur-Morin about 1,000.¹⁷¹ Total evacuations, wounded and gassed patients, to date were about 20,000. Selection of advanced sites for hospitals was delayed despite increasing needs that these units be moved forward, because of limitations imposed on railway service to several points which otherwise would have been satisfactory. Evacuation Hospital No. 6 was ordered to prepare for a quick movement.¹⁷¹

On July 26, the stream of wounded which had been flowing since early morning of July 15 showed no signs of diminution.¹⁷¹ On July 27 the Paris group was replaced by the First Army. On July 28, Evacuation Hospital

No. 6 was ordered to the vicinity of Chateau-Thierry, Mobile Hospital No. 1, which arrived there July 29, was ordered to discharge with Evacuation Hospital No. 6 the same consolidated service that it had previously performed with Evacuation Hospital No. 7.¹⁷² On the following day United States Army Ambulance Section No. 578, assigned to the 28th Division, was withdrawn and attached to Evacuation Hospital No. 6.¹⁷³

On July 29, most of the wounded came from the 42d Division, but a number were also received from other organizations. Arrangements were made with hospitals in Paris to receive one trainload of patients, and preparation was begun for the prompt docking of hospital barges in that city.¹⁷³

By July 30, Evacuation Hospital No. 7 had evacuated 15,871 patients, including some sent by ambulance from Jouy-sur-Morin. Juilly had evacuated 1,499 patients and Jouy-sur-Morin 924 by train. The total for the area to date was 28,882, exclusive of those from the 2d Division when first struck by the German advance early in June.¹⁷³

Evacuation Hospital No. 6 and Mobile Hospital No. 1, which had arrived at Chierry, near Chateau-Thierry, on July 29, were established by the 31st, but only the seriously wounded were to be received in them. Slightly and moderately wounded patients were to be sent to evacuation hospitals farther to the rear.¹⁷⁴

Evacuation Hospital No. 3 was ordered to go with all speed to La Ferte-Milon, where it arrived on July 29. The litter-bearer service at Evacuation Hospital No. 7 had again become a source of grave concern. The Artillery of the First Corps, in reserve, had furnished that unit on July 22 with 100 men who served as litter bearers for three days, relieving the personnel of the hospital, who were utterly exhausted, to that extent. A few days later Ambulance Company No. 120 had arrived, but now both its bearers and those with Evacuation Hospital No. 7 were greatly fatigued. The rest of the hospital personnel likewise was showing the severe strain they had undergone. None of them had had time to sleep for three weeks except occasionally during the late hours of the early morning, and even this had been interrupted by frequent demands.¹⁷⁴

At about this date 4 ambulance companies with 12 G. M. C. cars each arrived. This relieved the situation, for until these ambulances reported trains had had to be spotted at a given place at a given hour, in order that ambulances might be there ready to load them. Thus if trains arrived at Jouy-sur-Morin and Coulommiers the same morning, the number of ambulances was so small that the trains could not be loaded simultaneously. It was necessary to load at one point, then to make due allowance of time for ambulances to reach the other point before spotting a train there.¹⁷⁵

On August 1, Evacuation Hospital No. 5 was ordered from Crepy-en-Valois to Chateau-Thierry, where it arrived on August 2. On the same date territory in advance of that point was inspected with a view to selecting advance sites for evacuation hospitals, and one at Coincy was selected.

Recommendations were made that labor troops follow combatants and care for sanitation of the rear.

A floating dock, at Azy, near Chateau-Thierry, was now completed, and the first wounded to be sent by steam barge to Paris left there on August 2.¹⁷⁶ This convoy, made up of seriously wounded, included fracture cases and many patients who would have been nontransportable except by boat. The capacity of these barges varied, the largest carrying 84 patients. They were reported by the patients as being very comfortable, as the engines, being small and located well astern, caused little vibration. Bunks were placed in the hold, and the general appearance of the interior was similar to that of an ordinary hospital ward except that it was broader and the bunks cruder.¹⁷⁶ Personnel assigned to each barge consisted of 1 medical officer, 6 enlisted men of the Medical Department, 4 Red Cross workers, and a variable number of French litter bearers. The time required for a trip averaged 14 hours to Paris and 18 hours for the return.¹⁷⁷

Evacuation Hospital No. 5, after opening at Chateau-Thierry on August 2, received seriously wounded from one corps, while those from the other corps engaged were sent to Evacuation Hospital No. 6 and Mobile Hospital No. 1, at Chierry. Their work was coordinated and their evacuation effected by a representative from the army surgeon's office. Slightly wounded patients were sent to the hospitals at Chateau Perreuse, near La Ferte-sous-Jouarre, Montanglaust, and Jouy-sur-Morin. At this time a survey was made with a view to establishing at Chateau-Thierry the medical supply depot heretofore operating at Lieusaint, 50 km. (31 miles) to the rear.¹⁷⁷ This depot had been able to meet most demands promptly, the most serious shortages having been in instruments and tentage. Blankets, litters, antitetanic serum, pajamas, cots, and other essentials for front-line service had always been in stock. On several occasions the supply of splints had been well-nigh exhausted, and it was only by extra efforts that they were procured in time to meet all needs.¹⁷⁸ Requisitions from division surgeons had come direct to the property desk in the office of the liaison officer for the Medical Department (chief surgeon, Paris group), later to that in the army surgeon's office, where they were approved, to be forwarded twice daily to the depot which delivered supplies at the front by truck.¹⁷⁸

Evacuation Hospital No. 3 moved on August 3 to Crezancy, a small village about 8 km. (4.9 miles) east of Chateau-Thierry, and tentative arrangements were made to move Red Cross Hospital No. 107 from Jouy-sur-Morin to Chateau-Thierry.¹⁷⁸ The hospitals at Montanglaust filled during the night of August 4-5, but were cleared promptly by trains.¹⁷⁹ Inspection for a suitable location for an evacuation hospital near Fere-en-Tardenois was made at this time. By August 6, some slightly wounded patients were being received by Evacuation Hospitals No. 5 and No. 6 and Mobile Hospital No. 1, but the majority of such patients continued to be sent as before.¹⁷⁹ Arrangements were now made for the immediate movement of Red Cross Hospital No. 110 from Chantilly to Coincy, to which point Evacuation Hospital No. 4 was also ordered from Chateau Perreuse. The latter arrived at Coincy on

August 6.¹⁸⁰ Evacuation Hospital No. 3, established at La Ferte Milon on July 30, had moved, on August 5, to the vicinity of Chateau-Thierry, when fighting in that neighborhood assumed such unusual proportions. Devastation north of the Marne left little option in the choice of sites nearer the front, and the selection of Crezancy had been made only after some hesitancy.¹⁸¹ This location was so far forward there was danger that it would be bombed or bombarded, but the only alternative at this time was the grouping of all the forward evacuation hospitals at Chateau-Thierry—a disposition which appeared inadvisable.

On August 11, orders were received that the First Army move to the vicinity of Neufchateau. A report was received that the Paris group would be revived. This proved true, and upon departure of Colonel Stark to his new station Colonel Hutton resumed his former duties as chief surgeon of troops in the Marne area (Paris group).¹⁸² The personnel of Ambulance Company No. 120, which up to this time had been assisting Evacuation Hospital No. 7, was now sent to assist Red Cross Hospital No. 110 at Coincy, and much of the personnel and equipment of Red Cross Hospital No. 107 was moved from Jouy-sur-Morin to American Red Cross Hospital No. 111, newly established at the Hotel Dieu at Chateau-Thierry.¹⁸² Though this building had been greatly damaged by artillery fire, it lent itself well to hospital purposes and, by erecting tents in the neighboring grounds, the unit soon had about 600 beds set up. The site was a good one, being near the river and also near a railway spur.¹⁸²

On August 12 Evacuation Hospitals No. 6, No. 7, and No. 8 and Mobile Hospital No. 1 were ordered to move with the First Army to the vicinity of Neufchateau, but the other evacuation units were to remain in the Marne area.¹⁸² Information was received that the First Corps would move with the First Army, but that the Third Corps would remain in line along the Vesle, where it would pertain to the Paris group. As no further movement of our troops was contemplated at this moment, the medical units transferred, and probably others, could well be spared. By this time Evacuation Hospital No. 4 and Red Cross Hospital No. 110 were functioning at Coincy.¹⁸³

Evacuation by steam barges was on a fairly systematic basis by August 14. Ambulance Company No. 41, which had joined recently, had been directed to establish a camp at Azy, where it received patients preparatory to their removal by boat. This camp was furnished with matériel sufficient to equip a relay station of some 150 beds. Patients usually were received here in the afternoon, placed on board a barge the next morning, and arrived in Paris on the same day. Personnel of Evacuation Hospital No. 6, which heretofore had cared for patients here, now rejoined their own organization. An annoying but unavoidable feature of this barge service was the irregularity of its schedule, due to the fact that these vessels required frequent repairs. Nevertheless they proved of material assistance both by the relief which they afforded the congested railroads and by the greater comfort which they provided for the seriously wounded during transport.¹⁸³

A report rendered by Evacuation Hospital No. 7 before it left this area showed that it had evacuated 27,055 patients from July 17 to August 8.¹⁸⁴ Some of them had been treated in the hospitals at Jouy-sur-Morin and at Chateau Perreuse and were merely transferred to Evacuation Hospital No. 7 for evacuation.¹⁸¹ Mobile Hospital No. 1 had supplemented the latter unit during most of its service here; but nevertheless the amount of work accomplished, taking this into account, was considered remarkable, especially in view of the fact that neither organization had had prior service in campaign.¹⁸⁴

The medical supply depot at Chateau-Thierry supplied troops at the front for some days prior to August 16, replenishing its stock from the depot at Lieusaint, which was still in operation. This provision of a forward depot not only effected a considerable saving in transportation but it also accelerated delivery at the front. Divisions in need of supplies either sent for them by their own transport, or the articles requisitioned were sent up by truck from the depot.¹⁸⁴

Red Cross Hospitals No. 110 and No. 111 were staffed by army personnel, but their supplies, except rations, usually were obtained from the Red Cross, though it was understood that the resources of the army medical depots were at their disposal.¹⁸⁴ Attempts made by the Red Cross to furnish its hospital at Jouy-sur-Morin with rations had demonstrated the difficulties incident to that method of supplying food, and Red Cross units now drew rations as did other army hospitals. These were supplemented by donations from the Red Cross.¹⁸⁵

Reports now compiled (August 18) showing the length of time lapsing from receipt of wound to time of operation (bearing no reference to the hour of arrival at the evacuation hospital) showed that at Evacuation Hospital No. 7 the average was slightly less than 12 hours. Occasionally the wounded had reached the hospital in four hours, but pressure of work was such that with the operating teams actually available they could not always be operated immediately. Not infrequently the wounded had been lying in shell holes for a day or sometimes two days before they were recovered, which fact raised the average length of time lapsing prior to operation. The average interval prior to operation, at Chateau-Thierry, during the rush period was at first 10 hours, later 8, and at Coincy it was from 6 to 7 hours. Generally speaking, surgery was well done, with a minimum of delay, and results obtained compared favorably with those of any of our Allies.¹⁸⁶

Reserve personnel and hospitals were withdrawn from wherever they could be spared and sent to the Marne area for duty.¹⁸⁷

At the height of our activities there, the hospitalization provided for our forces was 6 evacuation hospitals, 2 American Red Cross hospitals, and 2 mobile hospitals, with a total bed capacity of approximately 7,000.¹⁸⁷ Their various locations have already been given. While relatively few in number, they were brought up as rapidly as possible. The greatest difficulties encountered in this and other respects were due to lack of transportation.

One evacuation hospital, urgently needed, through lack of motor transport had to be ordered up by rail. It was four days en route from Bazailles-

sur-Meuse to Coulommiers. Personnel in the region of Langres, also urgently needed, could not be provided with transportation until the French were appealed to and furnished motor camions for the movement.¹⁸⁷

The ambulance shortage was so acute that trucks had to be utilized in transporting the wounded. By working the personnel night and day, often without adequate rest, and operating hospital trains and ambulance evacuations to maximum possibilities, it was barely possible to meet requirements.¹⁸⁸

Evacuations, at first regulated from the station at Creil and then transferred to the more centralized station at Le Bourget, were largely carried on through the operation of American hospital trains garaged at Pantin, Paris. Frequently trains had to be borrowed from the French, but during the height of activities there were 16 American Expeditionary Forces trains in operation there.¹⁸⁷

In marked contrast to the chaotic conditions that existed in rear of the Soissons front because of the fact that the Medical Department had been given no information concerning the offensive there were the smoothness and precision with which the evacuation in rear of the divisions on the Chateau-Thierry front were conducted and operations on thousands of American wounded performed. For example, on the ninth day of the offensive and counteroffensive, operations and evacuations had been carried through with a regularity that still left 3,800 vacant beds in the evacuation hospital chain there. American forces were operating there with the French Sixth Army and were given unrestricted opportunity to conduct their own hospitalization and evacuation. The work carried on there under most trying circumstances challenged any criticism.¹⁸⁸

Reports received August 18 concerning the etiology of the epidemic of enteritis which had affected the troops since the early part of the month indicated that the disease was of bacillary origin. Responsibility was not attached to any one organism, though both Shiga and Flexner types were isolated.¹⁸⁵ The epidemic did not begin until our troops had started their advance. This was attended by the death of thousands of animals, whose carcasses, being unburied, had afforded opportunity for great multiplication of flies. There were few facilities for the protection of food from them, and it was believed that the epidemic was largely attributable to the agency of these insects.¹⁸² The fact that bread received at this time was moldy was also considered to be a possible contributory cause.¹⁸⁵

Portable apparatus to free men from lice were brought up back of the lines, but these were inadequate in number. Two for a division were authorized, but this quota, even when supplied, did not meet all requirements. In the absence of other delousing appliances, division surgeons improvised such apparatus as their facilities permitted.¹⁸³

MEDICAL SERVICE OF THE FRENCH SIXTH ARMY¹⁸⁹

A large proportion of the American troops in the Marne area operated under the control of the French Sixth Army, which occupied the region, including Chateau-Thierry. The chief surgeon of this army did not attempt to

control the American evacuation service; on the other hand, he assisted in every way possible its operation and individual development. Data furnished by him are inserted here in order to afford some basis of comparison of the methods of the French and American medical services which were closely associated in this area, and to give the total casualties of their army, to which several American divisions then belonged. The difficulties under which the French medical service was laboring at this time are evidenced by the large percentage of wounded which their army was obliged to evacuate unoperated.

On July 15 the front of the French Sixth Army from south of Faverolles to the west of Dormans, passing by Troesnes, Chezy-en-Orxois, Bussiares, Belleau, Bouresches, Vaux, and the course of the Marne, was held by the French Second and Seventh Corps, and the American First Army Corps with the French Thirty-eighth Corps echeloned from north to south and to the east. The military operations of the French Sixth Army following July 14, were divided by the French into three phases: (1) The German offensive of July 15-17, in the course of which only the right wing of the Sixth Army was engaged. (2) The attack of the 18th and 19th by the left wing of the Sixth Army. (3) The general attack, beginning July 19, by four corps from left to right—the Second and Seventh (French), First (American), and Thirty-eighth Corps (French). This, after the 27th, was continued by but three corps, the Seventh (French) having been withdrawn.

The French medical service was disposed on July 15 as follows: On the line of the corps—(1) One field hospital per division (assembly, urgent aid, washing of burned cases, and detention of suitable cases). (2) A group of surgical hospitals, by corps. (3) A center for convalescents and slightly gassed cases, by Army Corps.

On the line of the army: Evacuation hospitals of the first line at Meaux and Coulommiers, of the second line at Montevrain, with sections at Lagny and Ferrieres, medical centers at Meaux and Mauperthuis, and a convalescent center at La Houssaye (slightly sick, gas burned, and footsore).

All these formations taken together afforded 5,250 beds, of which 1,500 were primarily for surgical cases, 850 for medical, and 1,000 for convalescents.

Surgical facilities in both the corps and the army included (exclusive of those serving the Americans) 27 class A equipments, 14 class B equipments, certain emergency provisions for the changing of dressings, and 24 radiologic establishments.

The vehicles of the medical service in addition to those of divisions comprised 4 sanitary service sections (20 ambulances each) and 16 auto cars. In the course of the operations they were reinforced successively by 6 Army Ambulance sections (of which 1 was assigned to each of the 3 French corps and 3 to the American troops) and by 36 trucks (12 per French corps).

An evacuation service by water eventually was organized, with 2 freight barges, each carrying 40 sitting and 40 recumbent, and 3 Parisian steamships, each carrying 200 seated. On the 23rd of July to these were added a pinnace equipped with 94 litters; on the 25th another vessel.

During the first phase of these engagements there was no change in the location of French medical formations, though the enemy reached the imme-

diate vicinity of the triage of the 125th Division at Moulin Ragronet. In the second phase the divisional medical units in the Second and Seventh Corps were advanced, and in the third phase this progression was continued, while all the surgical groups of the several corps were advanced also. Thus the surgical hospitals of the Second Corps were moved from d'Acy-en-Multien to Marolles (July 21) where one hospital for nontransportables remained, the other units of this group moving to Grisolles on the same date. Simultaneously the surgical hospitals of the Seventh Corps moved from Gue a Tresmes to Crouy-sur-Ourcq. In the First Corps an American hospital replaced at Perreuse the surgical hospital of the 167th Infantry. On the right the surgical center of the French Thirty-eighth Corps moved July 23 from La Ferte-Gaucher to Charly, and the triage hospital at Verdelet moved July 28 to Chateau-Thierry.

Despite the elongation of the lines of evacuation, it was impracticable to move the two large evacuation centers at Meaux and Coulommiers, which, especially the one at Meaux, were laboring to full capacity, and even momentary cessation of the work of either would have greatly jeopardized the care of the wounded. The evacuation hospital at Montevrain was held ready to move forward, and on the 24th was sent to Charly, whence it transferred patients by barges to Meaux. On July 30 it moved to Chateau-Thierry, where it was held on the alert in reserve.

Relay units were established in the larger evacuation routes at Gue a Tresmes on the road to Villers-Cotterets and at Jouarre on the route to Chateau-Thierry. These relays utilized an army hospital, or were affiliated with a group of corps hospitals, their mission being to liberate the vehicles of the corps, to afford rest and nourishment to the passing casualties, and to stop and accommodate nontransportable patients.

On July 31 the army front extended from near Saponay to Seringes and Nesles, to descend toward Cierges and Roncheres. From left to right it was held by the French Second, American First, and French Thirty-eighth Corps. Surgical formations for these corps functioned respectively at Grisolles, Bezu, and Chateau-Thierry. Wounded reached the French evacuation hospital at Meaux by ambulances, relaying from Marolles, and by barges from Charly. After August 10 they arrived at Meaux by train from Chateau-Thierry. The most gravely wounded from Chateau-Thierry were operated here or sent to Marly. American troops were served by the American evacuation formations at Montanglaust and Jouy-sur-Morin. On the 30th the hospital of Meaux moved to Chateau-Thierry (Chierry).

As the hospital at Meaux had but a limited number of surgical equipments, it was impossible to operate all the wounded reaching this point. Therefore a very thorough surgical triage was organized under the consulting surgeon. Wounds of all recumbent and of doubtful sitting cases were inspected and 6 dressing tables were constantly operated by 12 alternating teams. After several days the need for medical officers was so great that the application of dressings, under direction of the consulting surgeon, was entrusted to two volunteer American women doctors and to especially qualified nurses.

A similar triage was conducted at Coulommiers on the 15th, 16th, and 17th of July. Almost all operations, both at this point and at Meaux, were performed on nontransportable patients. With the resources available this was the only solution of the problem—a minute triage of patients, operation on the nontransportables such as required immediate care and of such others as was possible, and the evacuation, nonoperated, of all others after rendering them such other surgical services as was indicated and possible.

Total French losses during the period from the 15th to the 31st of July were as follows: Wounded 14,055 (of whom 7,202 were operated in the army area and 6,853 evacuated not operated); gassed and burned, 2,081; sick, 2,554; total, 18,690. Of this number, 14,549 were evacuated by July 31; 2,145 remained in army hospitals, 285 in corps formations, and 1,710 in the camps for slight disabilities (centers de recuperables).

Total American patients during the same period evacuated by American formations were: Evacuation hospitals at Chateau-Montanglaust and Jouy-sur-Morin, 21,175; by hospital at Juilly, 1,199; total 22,374.

During August, losses were as follows in the French Sixth Army: French, wounded, 1,607; gassed, 1,102. American, wounded, 2,235; gassed, 335.

All French casualties evacuated by water went from Meaux to Charenton. These numbered 4,047, of whom 3,899 were not operated. Train transportations of French casualties numbered 10,502, of whom 7,438 were wounded (including 2,050 not operated), 1,621 sick, 1,443 gassed and burned. These were moved by 44 trains. Movement by water, though slow (8 km. per hour) was very comfortable. Sometimes hospital trains were greatly delayed, and occasionally they arrived at evacuation hospitals as much as nine hours late.

Causes and distribution of wounds in cases examined in the hospitals of the Sixth Army from the 15th to the 30th of July were as follows:

	Num- ber	Per cent		Num- ber	Per cent
Fragments of shell or shrapnel.....	5,195	46	Regions struck most frequently—Contd.		
Rifle or machine gun bullets.....	4,206	37	Upper limbs—		
Grenades.....	1,043	9	Arm.....	1,523	13
Accidents.....	827	7	Hand.....	1,029	9
Regions struck most frequently:			Forearm.....	897	8
Head.....	1,379	12	Lower limbs—		
Thorax.....	981	8	Thigh.....	1,432	12
Abdomen.....	452	3	Leg.....	1,541	13
Spine.....	320	2	Foot.....	762	6
			Multiple wounds.....	955	8

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- (44) Exhibit "N" to report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F., August 31, 1918. On file, Historical Division, S. G. O.
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- (46) *Ibid.*, 36.
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- (50) *Ibid.*, 13.
- (51) *Ibid.*, 14.
- (52) *Ibid.*, 15.
- (53) *Ibid.*, 16.
- (54) *Ibid.*, 18.
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- (59) F. O. No. 9, Headquarters, First Army Corps, July 17, 1918.
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- (66) Memorandum from Headquarters, First Army Corps, A. E. F., July 30, 1918. On file, Historical Division, S. G. O.
- (67) F. O. No. 11, Headquarters, First Army Corps, A. E. F., July 18, 1918.
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- (71) Report of Medical Department activities, First Army Corps, A. E. F., Chateau-Thierry operations, by Lieut. Col. J. W. Grissinger, M. C., corps surgeon, undated, 54. On file, Historical Division, S. G. O.
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- (74) Daily operations report, First Army Corps.
- (75) F. O. No. 25, Headquarters, First Army Corps, July 26, 1918.
- (76) Report of Medical Department activities, First Army Corps, A. E. F., Chateau-Thierry operations, by Lieut. Col. J. W. Grissinger, M. C., corps surgeon, undated, 57. On file, Historical Division, S. G. O.
- (77) F. O. No. 27, Headquarters, First Army Corps, A. E. F., July 28, 1918.
- (78) F. O. No. 30, Headquarters, First Army Corps, A. E. F., July 29, 1918.
- (79) Report of Medical Department activities, First Army Corps, A. E. F., Chateau-Thierry operations, by Lieut. Col. J. W. Grissinger, M. C., corps surgeon, undated, 59. On file, Historical Division, S. G. O.
- (80) F. O. No. 32, Headquarters, First Army Corps, July 31, 1918.
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- (82) F. O. No. 33, First Army Corps.
- (83) F. O. No. 34, Headquarters, First Army Corps, A. E. F., August 1, 1918.
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- (87) Report of Medical Department activities, First Army Corps, A. E. F., Chateau-Thierry operations, by Lieut. Col. J. W. Grissinger, M. C., corps surgeon, undated, 67. On file, Historical Division, S. G. O.
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- (97) *Ibid.*, Part II, 26.
- (98) *Ibid.*, Part II, 27.
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- (105) *Ibid.*, Part I, 48.
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- (181) Report on Medical Department activities of Evacuation Hospital No. 3, prepared under the direction of Lieut. Col. C. M. DeForest, M. C., commanding officer, undated. On file, Historical Division, S. G. O.
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CHAPTER XIII

THE OISE-AISNE OPERATION, AUGUST 18 TO SEPTEMBER 17, 1918 ^a

THIRD CORPS (28TH AND 77TH DIVISIONS; 32D DIVISION), AUGUST 29-31

On August 6, the date which officially marked the end of the Aisne-Marne operation,¹ the First and Third Corps held a continuous front of 11 km. (6.8 miles) along the Vesle.² Between that date and the commencement of the Oise-Aisne operation, August 18, there was but small movement of this line, but there were several changes in the composition of the troops holding it. On August 7, the 28th Division relieved the 32d, which then went into the corps reserve for 10 days;³ on August 12, the 77th Division relieved the 4th in the First Corps.² From August 2 to 10 the 6th Infantry Brigade of the 3d Division held a sector on the river line, under the French Third Corps, which was relieved by the American Third Corps on August 5, and then rejoined the remainder of the division in a rest area.⁴ At this time the transfer of our First Corps to the Woevre was ordered, and control of this front was turned over to our Third Corps, whose front, now occupied by the 28th on the right and by the 77th on the left, extended from Magneux to a point a little west of Bazoches.⁵

The Corps sector was prescribed in the following field order:

Field Order

P. C. THIRD ARMY HEADQUARTERS,

No. 13

12 August, 18—10.00 a. m.

* * * * * *

3. (a) Boundaries of Corps sector:

Western limit.—Pont Arcy—Vieil-Arcy—Dhuizel—Hill 175 (1,200 m. south of Dhuizel)—Hill 159.4 of the P. D. (1,000 m. east of Vauxtin—Les Wattes—Le Bois de la Bruyere (all above points to the 11th Corps)—northwest edge of L'Etang de la Graviere (to 3d Corps)—Mont Notre Dame—Fme Mont Bani (to 11th Corps)—Mareuil en Dole—Seringes et Nesles (to 3d Corps)—Fere-en-Tardenois—Ferme Preaux—Beuvarde—Courpoil—Trugny—Verdilly—Brasles (to 11th Corps).

Eastern limit.—Bouconville (to 3d Corps)—Craonnelle (to 5th Corps)—Concevreux—Meurival—Le Grand Hameau—cross roads 300 m. west of Huit Voisins—Courlondon—Magneux—Bond Maison Fme—Courville—Arcis le Ponsart (all of the above to the 3d Corps)—Aougnay (to 5th Corps)—Villers Agron Aiguizy (to 3d Corps)—Passy—Verneuil (to 5th Corps).

The Corps sector is divided into a right and left sector. Boundary between right and left sector:

Jaulgonne (to left sector).

Roncheres (to right sector).

^a The operations of the Third Corps (28th and 77th Divisions) in the Oise-Aisne operation are so intimately connected so far as the Medical Department is concerned with the period between the termination of the Aisne-Marne operation, August 5, and the beginning of the Oise-Aisne operation, August 18, that it was deemed best to cover here the short period which intervened between these two operations.

Cierges (to right sector).
Chamery (to right sector).
Dravegny (to right sector).
Hill 213.
Bergerie (right sector).
Mont St. Martin (left sector).
Road Fork (2047-2864).
Fismette (to right sector).
Hill 175.8.
Maizy (right sector).

Between August 6 and 18 many raids were made and withstood by the Third Corps, chiefly in the vicinity of Fismes and Fismette, in attempts by both belligerents to hold the river. Machine Gun opposition was stubborn and sustained, causing a constant stream of wounded.⁵

Action of the Third Corps on the Vesle is divided officially into two parts, the terminal stages of the Aisne-Marne operation ending August 6, and operations beginning August 18, called the Oise-Aisne operation; but so far as the Medical Department was concerned there was no intervening period, as many casualties occurred in the meantime.⁵ On August 18, General Petain began an offensive (Oise-Aisne) between Reims and the Oise in which our Third Corps participated.⁶ On September 4, the Third Corps crossed the Vesle with the 28th and 77th Divisions and overcame stubborn opposition on the plateau south of the Aisne, which was reached by the 77th Division on September 6.⁶ The 28th Division was withdrawn from the line on the following day, and on September 9 the Third Corps was transferred to the region of Verdun, the 77th Division remaining in the line on the Aisne River until September 17, when it also was withdrawn.⁶

MEDICAL DEPARTMENT ACTIVITIES

Action in front of Fismes represented a great advance in Medical Department organization and teamwork, and this became much more apparent during the latter part of the Oise-Aisne operation.⁷

Placing the sector under American tactical command made necessary the issuance of operations orders, by corps headquarters. Administrative orders also were received by the corps surgeon, defining railheads, evacuation routes, etc., for men and animals, conditions of circulation and the maintenance of roads, salvage, and other miscellaneous matters. It became the corps surgeon's custom to go daily to the officer at the head of G-1 to give him concise information concerning the Medical Department situation and to make definite recommendations.⁸ For successful relationship between the Medical Department and the staff organization the following conditions appeared to him to be necessary: (1) Full advance information for the corps surgeon concerning the battle; (2) reference to him of all medical matters, together with instructions for recommendations, and in case of disapproval a statement for future guidance of the policy on which disapproval was based; and (3) cordial personal relations.⁸ It was the habit of the head of G-1 to request the corps surgeon to write a draft of the paragraph relating to evacuation, which always appeared in the administrative order.⁸ Before an attack or large raid or any important

OISE - AISNE OPERATION THIRD CORPS

TWENTY-EIGHTTH AND SEVENTY-SEVENTH DIVISIONS
AUGUST 18 - SEPTEMBER 6, 1918



Battle lines, taken from existing orders and maps, are approximate.

action which was foreseen, these officers went over the map together, the former explaining as well as possible the condition of roads and the requirements concerning food and ammunition supply.⁸ Whenever possible he gave the corps surgeon opportunity to take a battle map to his office so that he might study the situation and draft the evacuation paragraph.⁸ Medical Department needs for forwarding supplies and evacuating the wounded were always fully considered in making up the circulation map and traffic regulations.⁸

As an illustration of the evacuation paragraph in an administrative order accompanying an operations order, the following is quoted:⁹

(a) Men: At H hour field hospitals will be established as follows: 77th Division at Chartreuve Fme. 28th Division at Longeville Fme.

As advance progresses, field hospitals will be advanced as directed by the corps surgeon.

Nontransportable and seriously wounded to Evacuation Hospital No. 4, at Coincy.

Fracture cases and slightly wounded to Red Cross Hospital No. 111, at Jaulgonne.

All other cases to Red Cross Hospital No. 110, at Coincy.

Routes from field hospitals as follows:

77th Division by Army road to Coincy by Dole—Sergy—Courmont to Jaulgonne.

28th Division by Coulonges—Fere-en-Tardenois army road to Coincy. By Coulonges—Cierges—Courmont to Jaulgonne.

NOTE.—In case road south of Dole unfinished, then 77th Division to Jaulgonne via Dravegny—Coulonges.

To insure the drafting of sound orders for evacuation it was found necessary for the corps surgeon to see almost daily the army surgeon or his representative in the sector concerned, and also the division surgeons. It was also necessary that he visit frequently the hospitals to which evacuations were being made and inspect the lines of evacuation as far forward as the divisional field hospitals, frequently going in advance of them to the posts maintained by ambulance companies.¹⁰ The medical service was so subject to change and to emergency movements that it was never possible to maintain smooth evacuation merely through administrative orders, even though these were published daily, and it was absolutely necessary to change, by telephone messages or personal communications, formal or other orders given to division surgeons.¹⁰ In the paragraph of the order quoted it will be noted that it includes the sentence, "As advance progresses, field hospitals will be advanced as directed by the corps surgeon." This was changed later to read "As the advance progresses, the corps surgeon will make such changes in evacuation and hospitalization as may be necessary."¹⁰

The arrangement of army evacuation hospitals, on roads convenient to the corps and on railways convenient for evacuation, had been gradually accomplished and was partially the result of the training in staff work which was progressing in the general staffs of both corps and army, including the Medical Department members of those staffs.⁷

The corps surgeon, Third Corps, reported that he recognized the fact that during the entire Vesle campaign a constructive stage had now been reached.¹¹

THE 28TH DIVISION

On the night of August 6-7, the 28th Division relieved the 32d Division of the Third Corps in the Fismes sector. It participated in the Oise-Aisne operation from August 18 to September 7, during which operation severe fighting took place in the advance north of the Vesle.¹² In greater detail its operations here are recorded as follows:

On August 7, the 2d Battalion of the 112th Infantry attacked and succeeded in completing the occupation of Fismes and gained a foothold in the village of Fismette, but was forced to withdraw from the latter.

On August 8, the artillery placed a destructive fire on Fismette and the battalion, behind a rolling barrage, crossed the stream and after some heavy fighting was able to establish itself in the southern section of the village.¹³

On August 9, the division had put 11 companies and some machine guns north of the Vesle and on the day following cleared up the woods near Chateau du Diable. Enemy artillery was active, especially around Fismes and Fismette, and airplanes bombed some American positions.¹³

On the night of August 12-13, the 55th Brigade relieved the 56th Brigade and the French 164th Division, establishing a liaison with the 77th Division on its left and French 20th Division on its right.¹³ During the 24 hours ending at midnight of the 16th the enemy was active, throwing a great number of gas shells into the front line and high explosives into Arcis-le-Ponsart.¹⁴ Enemy activities increased on August 20, and during August 21 Fismes and Mont St. Martin were heavily shelled. His artillery continued harassing fire, using mustard and sternutatory gases during August 22 and 23, and bringing larger guns into action during the ensuing week.¹⁴

On the morning of August 27, the enemy attacked and captured Fismette and continued to cover Fismes and roads leading thereto with machine guns, preventing our troops from reaching the river.¹³

On September 4, the 28th Division crossed the Vesle and progressed about 3.5 km. (2.1 miles) on its entire front, capturing Fismette, Courlandon, Baslieux, and Le Grand Hameau. By the evening of September 5, the troops were at the head of a ravine sloping toward the Aisne, and on the two following days continued to push the enemy back, despite strong resistance at Glennes, enemy airplane activity, and counterattacks in force. Hostile artillery was now very active, using a great number of mustard gas shells.¹⁴ The division was withdrawn on September 8, and moved to the Argonne Forest.¹⁵

MEDICAL DEPARTMENT ACTIVITIES

AMBULANCE COMPANIES

Headquarters of the ambulance company section of the sanitary train had been moved from Le Rousset to Chateau-Thierry on July 24, and from that point to Cohan on August 11. At the latter place all ambulances were pooled, to be distributed as required. Here also was established a depot for spare parts (tires, etc.), which proved of great value. The triage at this time was at Cohan; this situation facilitated ambulance service. The road from

St. Gilles to Fismes had been cleared and soon thereafter the road from Fismes to Villette, just in time to meet the greatest emergency experienced up to this time in the sector. Within 24 hours 1,094 patients were evacuated by this road to the triage at Longeville Ferme.¹⁶

Ambulance Company No. 109 had moved to Chateau-Thierry July 26, maintained a dressing station at Mont St. Pere July 29-31, and sent out litter squads to serve the troops. On August 13 the company proceeded to Cohan and then, having received animals and animal-drawn ambulances, was detailed to the service of the artillery brigade. Because of the isolated positions the batteries often occupied, these vehicles proved of peculiar value where motor ambulances would have been useless. The company remained on this duty until the division was withdrawn, meanwhile sending details of litter bearers to serve the infantry.¹⁷

Ambulance Company No. 110 had moved from Le Charmel on August 3, proceeding to Chery-Chartreuve, where it arrived August 9. It maintained there a dressing station until August 13, evacuating the wounded of the 56th Brigade under exceptionally difficult circumstances. One of the dressing stations of the brigade was located at Fismes, from which place the Germans had not yet been expelled and near whose western limits their machine-gun nests continued active.¹⁸ The enemy also occupied Fismette and had direct observation at close range of the only evacuation route available from this station. On the morning of August 10 the ambulance company made needed repairs to the bridge over the Ardre and advanced three ambulances into Fismes.¹⁹ This precipitated artillery and machine-gun fire directed against the building in front of which the vehicles were being loaded with the more seriously wounded. Shelling was so heavy that it became advisable to return patients to the protection afforded by the cellar utilized by the dressing station, but after this had received five direct hits, patients were removed by ambulances operating individually, until all had been evacuated. The station then was closed.²⁰

On August 13, the company moved to L'Abbaye d'Igny, where, though it was in reserve, it operated a dressing station for the 56th Brigade, also in reserve.²⁰ An additional dressing station, sent out from this point to St. Gilles, was operated from August 18 to September 6.²⁰ Headquarters of the company moved to Cohan on August 20, and on September 6 an advance dressing station was established at Magneux in conjunction with one operated by Ambulance Company No. 112. During the latter service three members of Ambulance Company No. 110 were gassed and two of its ambulances were destroyed by shell fire.²¹

Ambulance Company No. 111 moved from Le Charmel to Dravegny on August 3, remaining there until August 13.²² During this period the company served the 32d Division and the artillery units between Dravegny and St. Gilles, as well as the 28th Division. On August 8, an advance dressing station was established at St. Gilles, but it had to be abandoned next day because of shell fire.²² During this period ambulances made daily trips into St. Gilles and evacuated the wounded from that area.²² The company reestab-

lished its station at St. Gilles on August 12, and on the following day opened another at Courville, both of which were much harassed by enemy shells. At the former six men were gassed.²² On August 20 the company moved to Cohan, a detachment from Ambulance Company No. 112 taking over the station at Courville.²² The company now was engaged chiefly in evacuation from the triage operated at Cohan by Field Hospital No. 109, but it also conducted a small dressing station on the Chery-Chartreuve—Fismes road southeast of Mont St. Martin.²³ When the triage moved to Longeville Ferme the ambulances of this company continued its evacuation service and also assisted in the evacuation of dressing stations established for the 109th and 110th Infantry regiments.²³

Ambulance Company No. 112, with headquarters at Chateau-Thierry, had been engaged in clearing the divisional triage at that point during the Aisne-Marne operation, in maintaining a dressing station, and in furnishing litter bearer details to serve the 112th Infantry. On August 12, the company moved to Cohan, where it assisted in evacuation of the triage, meanwhile maintaining a dressing station at Mont St. Martin.²⁴ It relieved Ambulance Company No. 111 in the operation of the dressing station and a dispensary for skin diseases.²⁴ For several days it operated the last-mentioned formation and four dressing stations with but three medical officers, until, on September 5, the entire company moved to Courville, whence it sent out dressing-station parties to Villette and Baslieux.²⁴ In conjunction with Ambulance Company No. 110, it also conducted an advance station at Magneux. From these stations in less than 24 hours 1,094 patients were evacuated to the triage at Longeville Ferme.²¹ On September 8, when the company was relieved, it discontinued its stations and assembled at L'Abbaye d'Igny.¹⁷

After participation in these engagements the ambulance units were assembled at Pierry, where they arrived in the interval September 10 to 12. They then moved to Andernay, where they remained in rest until September 28.²⁵

FIELD HOSPITALS

In the 28th Division, by this time, the functions of the four field hospitals were well differentiated. One of them operated as a triage and cared for the nontransportable wounded, another for gassed cases, a third for the sick, while the fourth was held in reserve to "leapfrog" if need be and thus to serve in its turn as a triage when the advance of troops made this exchange of duties advisable. During the latter part of the attack along the Vesle the 28th Division triage was operated in a church at Cohan and hospitals for the sick and gassed were at Reddy Ferme, on the road between Coulonges and Cierges. When the advance made this possible the reserve hospital was sent forward to Longeville Ferme to function as a triage, and the triage at Cohan, as soon as it had disposed of its nontransportable wounded, then went into reserve. In the final phases of the action ambulance stations were maintained by the 28th Division at Fismes.⁷

Field Hospital No. 109 had moved to Cohan on August 7, and there for a month operated a triage despite the frequent shelling and bombing of the town.²⁶ While on this service it received 3,723 patients, utilizing a system evolved during its previous service at Le Charmel, which proved adequate to meet all emergencies.²⁷ After triage service was taken over by another hospital of the division, Field Hospital No. 112, September 5-7, this unit then cared for the seriously wounded until it was ordered closed.²⁸ On September 11 it was moving on trucks to Dormans and on the following day by train to Moussy. While in this sector the American Red Cross and the Young Men's Christian Association were active in furnishing patients with delicacies and comforts obtainable from no other sources.²⁷

Field Hospital No. 110 had moved to Courmont on August 4 and there for a month cared for gassed and psychiatric patients, of whom it admitted here 1,926, returning 650 to duty.²⁹ On September 3 it received the divisional sick from Field Hospital No. 111, which was ordered to move. Two days later, Field Hospital No. 110 proceeded with its patients to Reddy Ferme, remaining five days. While at this place it received 1,060 patients, returning to duty 70 per cent of that number.²⁹ On September 10, this hospital, having received orders to move to Dormans, loaded 11 trucks and was en route within 23 minutes.³⁰

Field Hospital No. 111 moved from Fontaine Tige on August 8 to Jaulgonne and thence to Courmont, where it had been preceded by Field Hospital No. 110.³¹ A site was selected in rear of the latter organization, tents set up, and patients received immediately. On August 31 the unit evacuated its remaining patients and moved to Reddy Ferme, a group of buildings about 2 km. (1.2 miles) north of Cierges. Accommodations for 100 patients were provided here in buildings, and tentage was pitched in an adjoining field. The unit remained at Reddy Ferme until September 11, when it moved to Moussy.³²

Field Hospital No. 112 operated at Chateau-Thierry in a triple capacity, functioning as the divisional triage, caring for the seriously wounded, and acting as evacuation hospital for the division until August 5.³³ Its admissions then rapidly diminished until August 9, when it transferred its remaining cases to Army Red Cross Hospital No. 111. In the interval between July 25 and August 9 it received 4,931 patients and performed 206 major operations.³³ The hospital now proceeded to Cohan, in whose neighborhood it occupied buildings that had been but little damaged, and pitched tentage on a line 9.1 meters (30 feet) from the road.³⁴ This site presented several advantages—an abundance of good water, thick sod, level ground, and buildings suitable for kitchen and operating-room purposes. In order of location from the main road into the field occupied by the unit were the receiving ward, shock ward, operating tent with X-ray plant, three convalescent tents, and one store tent. Beyond and on the same line with these, but facing in the opposite direction, were tents for personnel.³⁴ Here the unit was charged only with the care of seriously wounded patients whose condition demanded immediate operation. Attached to it were four operating teams, a shock team, a fracture specialist, nurses, and an X-ray plant.³⁵ As comparatively few pa-

tients were received here, on August 19 the unit broke camp and moved to Courmont, where it remained in rest until August 31, when it advanced to Reddy Ferme and from there, on September 4, to Longeville Ferme.³⁶ Here arrangements were made to care for 300 patients and to operate the divisional triage. Certain clerks were designated to read entries on diagnosis tags to other clerks who recorded the required data on field medical and register cards, respectively.³⁷ Daily reports were formulated of casualties admitted and of changes. Just beyond these clerks were placed tables for surgical and shock cases, and beyond these were tables for fracture cases. Close at hand were splints, dressings, and other supplies appropriate for the particular work of each section. Considerable space was equipped for sitting, slightly wounded patients, and for patients on litters awaiting evacuation. Litter squads were posted at the reception door, with a clerk who checked evacuations at the exit from the building. In the evacuation service of the hospital and parked in its vicinity were all the vehicles of Ambulance Company No. 111. Slightly wounded patients were sent to Army Red Cross Hospital No. 111, at Chateau-Thierry, and to hospitals at Coincy.³⁸ Those needing immediate operation were sent to Field Hospital No. 109, at Cohan, gas and psychoneurotic cases to Field Hospital No. 110, and the sick to Field Hospital No. 111, at Reddy Ferme. In the 24 hours following daybreak of September 6, 1,190 patients were received.³⁸ All were given suitable treatment, but evacuation facilities being inadequate the Third Corps sent 12 ambulances to assist in this service. The maximum rate of admission was attained on the morning of September 7, but by noon of that day the last evacuation had been accomplished.³⁹ In the 24 hours following noon of September 6, 269 patients were admitted. Admissions from September 6 to 9, inclusive, were 1,809, 9 cases proving fatal. On September 8 the hospital began its movement to Andernay, via Dormans and Moussy.³⁹

THE 77TH DIVISION

On August 12 the 77th Division relieved the French 62d and the American 4th Divisions on the front of the Third Corps, along the line south of and parallel to the Vesle, from Mont Notre Dame through St. Thibaut and Ville-savoie in the direction of Fismes.⁴⁰ Its frontage was about 5 km. (3.1 miles). Though the Oisne-Aisne operation commenced on August 18, it was not until the first days of September, when the enemy had begun to retire, that the 77th was ordered to advance.⁴⁰ On September 4 it crossed the Vesle, and Bazoches and Perles were taken.⁴⁰

On September 5 the line was advanced to the general line from east to west: Le Bois de la Vicomtee, Bois des Genettes to Bois de Mauchamp—Pierre Laroche—La Butte de Bourmont—along Revillon—Glennes Road.

On the 6th the right flank remained practically in position on account of resistance. The left was advanced to position on road Vieil-Arcy, Villers-en-Prayeres.

On the 7th the division on its right (28th) was relieved by the French 62d Division, and on the following day the 77th, in conjunction with the French 62d Division, attacked and made small gains. No attacks were made

again until September 13, when the 77th Division was to advance its right and occupy La Petite Montagne. The advance elements of the division reached positions at La Petite Montagne, but as the French 62d Division did not make the advance as expected, the line was withdrawn.⁴¹ When the division was relieved by Italian troops on the night of September 15-16 the line ran from Vieil-Arcy through Villers-en-Prayeres southeast to point south of Glennes.⁴⁰

MEDICAL DEPARTMENT ACTIVITIES

Battalion aid stations in this sector were often scarcely established before the troops moved forward, and it was necessary to collect the wounded at some central point whence the ambulance companies could move them.⁴² Patients in shock were given some treatment at battalion aid stations, and this was carried out in a progressively more thorough manner at successive stations to the rear.⁴³ Often, because of heavy shelling, it was impossible to remove the wounded to an advance dressing station before dark. This was especially so in this sector. Liaison was maintained by runners.⁴³

AMBULANCE COMPANIES

In this, as in other sectors in which the division operated, two ambulance companies were employed and two held in reserve, the latter "leapfrogging" when an advance was made.⁴² Ambulances were distributed to a number of battalion posts. The time required for removal of a wounded man to a field hospital was usually from three to eight hours.⁴³ In this operation the divisional ambulances were supplemented by United States Ambulance Service Sections No. 578 and No. 611, and by ambulances from the corps train.⁴⁴

FIELD HOSPITALS

The triage and the hospital for the seriously wounded were located at Chateau de la Foret and at Chery-Chartreuve.⁴⁵

Two permanent triage units were organized in this division from officers and personnel of the two field hospitals designated to receive surgical cases, and these units alternated in this service.⁴² Surgical, shock, and gas teams were organized for service at the triage, officers and enlisted men alike being carefully selected. Two of the latter were assigned to each officer, the group of three remaining a permanent unit.⁴⁶ The operating capacity of the triage hospital varied according to requirements, but two operating teams usually were kept employed. Other selected enlisted men were permanently assigned to certain duties in the discharge of which it was thought they would be especially efficient; e. g., application of splints or bandages, administration of morphine or antitetanic serum, etc. Likewise details were made and by permanent assignment were used for such duties as clerical work, policing, salvage, litter bearing, and administration of food to patients.⁴⁶ The operating room detail consisted of men who had been hospital orderlies in civil life. During this operation additional teams were assigned to the field hospitals, consisting of surgeons especially qualified for treating particular types of cases; e. g.,

abdominal wounds, chest wounds, etc.⁴⁵ Equipment of the triage was selected from those of two field hospitals, disregarding the supply tables, and was supplemented by an abundance of articles which experience proved were most needed; e. g., litters, blankets, "front parcels" antitetanic serum, and splints.⁴⁶ Established in conjunction with the triage were the field hospitals receiving slightly wounded, sick, and gassed patients, and no cases were held at that point (the triage) except such as were considered nontransportable.

The group of four field hospitals of the 77th Division at Chateau de la Foret was admirably organized for a relatively quiet period, but for more active service other dispositions appeared advisable.²⁷ Therefore, when the enemy stopped active shelling of Mareuil-en-Dole, the triage (a field hospital) of this division was placed in a chateau near Chery-Chartreuve, the hospitals for gassed and sick patients near Nesles, and the reserve hospital at Ferme les Bons Hommes. Ambulance stations were placed at Bazoches and Fismette as soon as the advance made this possible.⁷

When field hospitals operated in the specialized manner above described, it was impossible to hold any of them in reserve. The normal capacity of each of these hospitals was 216 beds, but on several occasions patients more than double this number were cared for. The gas hospital accommodated 216 patients.⁴⁸ Shock cases received especial care, with resultant saving of many lives. Special collapsible tables, improvised from broken litters and easily transported, were provided for their use. When en route to evacuation hospitals these patients were surrounded with hot-water bottles, heated shell cases, or any other available articles capable of retaining heat, and they often reached their destination in better condition than they were an hour or so after being wounded.⁴³ All wounded patients were evacuated immediately, if possible, but of the 2,700 gassed patients admitted in this action along the Vesle, 50 per cent were returned to duty.⁴⁷ All cases of gassing in this sector were attributed to dichlorethylsulphide, and half of them evidenced burns.⁴⁷ The average time for recovery in this division of cases returned to duty from field hospitals was from one to three days, including the gassed and the sick,⁴⁸ but some cases were retained one or two weeks, during relatively inactive periods. Only two cases of psychoneurosis were received at the field hospitals, one was returned to duty and the other evacuated, but a number of men claiming to be suffering from "shell shock" appeared at the battalion aid posts.⁴⁸

EVACUATION IN REAR OF THE THIRD CORPS

At the end of the Aisne-Marne operation, the evacuation route from the Vesle near Fismes lay through the Third Corps sector by way of Jaulgonne to Chierry or Chateau-Thierry. This long distance was shortened by the establishment of Evacuation Hospital No. 3 at Crezancy, on August 12, but as temporary bridges had to be utilized, traffic conditions in the Marne area continued difficult and delayed evacuations. The situation was greatly improved, however, when Mobile Hospital No. 2, Evacuation Hospital No. 4, and Army Red Cross Evacuation Hospital No. 110 were established at Coincy. The great

east-and-west highway to that point, through Coulonges, Nesles, and Fere-en-Tardenois, into which led the fine north-and-south roads from the battle field, facilitated access to these hospitals.⁴⁹

On August 19 arrangements were made for expansion of the barge service, increasing the number of barges from the three then in operation to six—the Paris group was discontinued before these additional boats were received. In order that barges might load at Chateau-Thierry instead of at Azy, efforts were renewed to have removed a demolished bridge which blocked travel on the Marne. Evacuation Hospital No. 3 and Field Hospital No. 41 were now ordered to report to the First Army for duty.⁵⁰

During the advance from the Vesle to the Aisne, with ambulance stations for the 28th at Fismes and for the 77th at Fismette and Bazoches; with very advanced stations for the 77th at Blanzly-les-Fismes and Vauxcere, evacuation was comparatively easy to the triage of the 28th Division at Longeville Ferme and to that of the 77th to Chery-Chartreuve. With fine, direct roads leading to the two large evacuation hospitals at Coincy and to those at Chateau-Thierry (for the slightly wounded), provisions for evacuation were as satisfactory as could reasonably be desired.⁹

THE 32D DIVISION

From August 7 to 23 the 32d Division had been in the reserve of the Third Corps. On August 25 it was assembled in the vicinity of Pierrefonds, in reserve of the army group, and came under control of the French Tenth Army. During the night of August 26–27 it was moved to the vicinity of Tartiers in the reserve of the French Thirtieth Corps.⁵¹

On the night of August 27–28 this division, relieving the French 127th Division, took over a sector north of Soissons and approximately 2 km. (1.2 miles) west of Juvigny, and at 7 o'clock on the 28th of August was ordered to attack.⁵² No reconnaissance had been possible,⁵³ but the 63d Brigade moved forward promptly and reached its objective, the railroad track west of the town.⁵³

The entire French Tenth Army attacked on the 29th but no advance was made.⁵⁴ On the morning of August 30 the French 59th Division, on the right, advanced and at 1 p. m. the 32d Division was ordered to advance its right flank, in liaison with the 55th Division on its right. The Germans appeared to be retiring.⁵⁵ Plans were made at once to capture Juvigny by a turning movement of the right, while the left kept liaison with the French 66th Division on the left.⁵⁶ When the attack was launched the left flank was held up by heavy fire from the northeast while the right flank moved forward and forced its way through the ravine to a position to the south of Juvigny, with its right flank partially enveloping that town to the east. The left flank moved forward in part along the low ground to the west of Juvigny and reached a position to the north of the town, and in this way the two forces practically surrounded the village.⁵⁶

The enemy's counterattack on the left was easily repulsed; troops from the reserve of the right wing entered the town from the southwest and, after

severe fighting, cleared up the place of enemy.⁵⁶ In this operation the division sustained many casualties, especially on the left.⁵⁷

On the morning of August 31 the front line of the 32d Division was in advance of the divisions on the right and left; that on the left had made no advance on August 30 and was 1 km. (0.62 mile) in the rear; that on the right about half a km. (0.31 mile). A general attack was launched at 4 p. m., preceded by a triple barrage covering a depth of 1.5 km. (0.93 mile).⁵⁸ The progress of the troops continued until reports indicated that the advance had reached the Terny—Sorny—Bethancourt road. Some of the right elements of the division were held up by machine-gun nests.⁵⁸ Casualties, although not light, were small considering the magnitude of the operation and the stubborn resistance of the enemy.⁵⁹

Some improvements were made in the position of advance elements on the morning of September 1, and on the night of September 1-2 the 32d Division was relieved by the 1st Moroccan Division,⁵⁹ passing into the reserve of the Thirtieth Corps and then into that of the French Tenth Army.

It was next sent to a rest area near Joinville and remained at this place until September 22, when it again started north to join the Fifth Army Corps for the coming Meuse-Argonne operation.⁶⁰

MEDICAL DEPARTMENT ACTIVITIES

Regimental and battalion aid stations were established at or near the control posts of the various headquarters, in cellars, dugouts, or with other cover. In some instances regimental stations were very near the advance ambulance dressing stations. Bearer details were supplemented by 50 men from Ambulance Company No. 128 (horse-drawn), then in reserve, 30 men from Ambulance Companies No. 125 and No. 127, by bandsmen, and by details from the line when necessary. Instructions were now issued to the effect that bandsmen should not be used for this service if at all avoidable.⁶¹

AMBULANCE COMPANIES

On August 26 headquarters of the ambulance section and two of its companies were near La Vache Noire, but later, on the same day, the entire ambulance section of the sanitary train was advanced to Vic-sur-Aisne. On August 27 a dressing station was established in cellars at Tartiers, with ambulance head at Bieuxy.⁶¹ On September 2 the station at Tartiers was closed and a new one opened at Valprieux Ferme, with ambulance head at the railroad, west of Juvigny. Litter bearers went from this station to the aid stations in and beyond that town. The largest number of wounded transported in one day was 1,429, during the 24 hours ending September 1.⁶¹ Because of the great number who had to be cared for, some sick and slightly gassed cases accumulated at the dressing station, but this congestion was overcome by the aid of 12 trucks obtained from the division quartermaster. All ambulances were unloaded at the triage at Montois and thus released for immediate return. With the exception of one ambulance damaged by shell fire on August 29, all these vehicles were operated continuously.⁶¹

Motor Ambulance Companies No. 125, No. 126, and No. 127 were all on duty during the entire period, none being held in reserve. The 128th Company (horse drawn) had two ambulances with each artillery regiment and four at the triage, for short hauls to field hospitals. After August 29 the commanding officer of this company, with the remainder of its personnel, was stationed at headquarters to render emergency service at a relay, sorting, and dressing station for troops in reserve. During this period upward of 3,100 cases from the 32d Division and other troops were transported by the Ambulance Section.⁶²

FIELD HOSPITALS

On August 27, at the beginning of the operation, the divisional triage was established at Montois by personnel from Field Hospital No. 127, and was operated as an entirely distance formation. About 182 meters (200 yards) from it Field Hospital No. 127 cared for seriously wounded cases, these two institutions together having some 500 beds. In the same locality Field Hospital 126 received gas cases. Field Hospital No. 128 remained at St. Etienne, received the sick, psychoneurotic, slightly gassed, and slightly wounded. Field Hospital No. 125 was held in reserve at Vic-sur-Aisne, its commissioned and enlisted personnel assisting in the services of other hospitals.⁶²

The duties of the triage were described as follows:

(1) Classification and grouping of casualties into two categories, transportable and nontransportable.

(2) Further classification and distribution as follows:⁶³ Gunshot wounds, (a) slight, (b) severe; psychoneuroses; gassed; injured; sick.

(3) Rendition of minor surgical service and emergency medical treatment in order to make transportable those patients who otherwise could not be moved.

(4) Readjustment of splints and bandages when necessary. (At least one officer and frequently two were assigned to this duty.)

(5) Administration of antitetanic serum if there was no evidence on the patient's tag or forehead that this already had been given.

(6) Preparation of hot drinks and food and their administration as indicated.

(7) Preparation of accurate and complete records.

In this engagement the admissions recorded by the triage were the following:⁶²

Gunshot wounds:		Psychoneuroses.....	116
Severe.....	605	Injured.....	43
Slight.....	1,103	Dead when received.....	7
Gassed.....	573		
Sick.....	329	Total.....	2,776

The average time consumed in transporting patients to the triage was approximately three hours, and the time from this point to hospitals in the rear was from one-half to two hours, according to the distance.⁶⁴

Field Hospital No. 127 treated only nontransportable surgical cases, its personnel being reinforced by Naval Surgical Team No. 1, Shock Team No. 116, and an X-ray team, with five other operating teams organized from the medical personnel of the division. Of 284 patients sent to this hospital, 7 died before arrival, 40 died before operation, and 39 subsequent to operation. The remaining 215 patients, presenting 419 wounds, were operated.⁶² The classification of these injuries, which typify those incurred in open warfare, was reported by the surgical consultant for the division as follows:⁶⁵

	Wounds in 215 cases treated	Wounds in 34 deaths which occurred		Wounds in 215 cases treated	Wounds in 34 deaths which occurred
Soft parts.....	170	17	Abdomen, without injury to hollow viscus.....	11	2
Soft parts, associated with injury to large blood vessels.....	7	1	Head and brain.....	15	2
Fractures:			Amputation.....	8	1
Femur.....	14	6	Cord injuries:		
Humerus.....	15	1	Partial.....	3	2
Radius, ulna, tibia or fibula.....	37	9	Complete.....	1	0
Other bones.....	46	1	Symptoms present but no injury to cord found.....	4	0
Knee joints.....	5	0	Collapsed eyes.....	5	0
Elbow joints.....	5	1			
Combined chest and abdominal.....	6	4			
Chest, aspirating.....	41	5	Total.....	419	52
Abdomen, with injury to hollow viscus.....	25	10			

Few patients were kept in this hospital more than three days; habitually they were evacuated as soon as transportation was available. One of the greatest difficulties encountered here was that of caring for the continuous stream of patients which arrived at night, for this unit was without exterior lights and harassed by frequent air raids.⁶³

The triage was closed on September 5, and on the day following Field Hospital No. 127 was cleared and closed in preparation for movement to the Joinville area.⁶⁴

Field Hospital No. 126 received 460 gassed cases, none of which was fatal. In marked contrast to conditions experienced in the preceding operation, practically all of these cases presented positive evidence of gassing, and some were affected severely. Slight cases were transferred to Field Hospital No. 128. The latter admitted 498 cases of sickness, neuroses, slightly gassed, and slightly wounded.⁶⁵

EVACUATION IN REAR OF THE 32D DIVISION

Evacuation from Montois to St. Remy was effected by 10 motor ambulances from Evacuation Hospital No. 5 and by trucks of the sanitary train. On August 29 an American hospital train arrived at La Vache Noire and removed 249 slightly wounded, gassed, and postoperative cases. On September 1 a French train in American service at the same point received 44 postoperative cases.⁶⁶

As an instance of the difficulties encountered by the chief surgeon of the Paris group, in his attempts to provide hospital facilities for prospective battle casualties of a division presumably going into action, and especially when the

destination of the division could not be discovered by him, the following account is given:⁶⁷

On August 23 the chief surgeon, Paris group, noticing that many trucks were passing through La Ferte-sous-Jouarre, inquired of G-4 and of the French whether an American division was to move. No information was then obtainable, but that night it was learned that the 32d Division had been loaned to the French and would leave at daybreak for an unknown destination. As French hospitalization in rear of the divisions, though made as readily available to our wounded as to their own, had proved inadequate in the offensive toward Soissons, the chief surgeon made every effort to learn the intended destination of the 32d Division in order that an evacuation hospital might be sent with it, and an officer representing him was ordered to join the division with instructions to accompany it and to inform his chief by telephone, telegram, or courier as soon as he could ascertain the probable sector which the division would occupy.⁶⁸ The division surgeon reported on the same day that the division was moving toward Compiègne, but he could furnish no other information, nor was any obtainable from any other source.⁶⁹ Evacuation Hospital No. 5 at Chateau-Thierry was directed to transfer its patients without delay to Red Cross Hospital No. 111, to pack and to prepare for a rapid movement.⁷⁰ The following day efforts were made to obtain trucks for this movement, only 15 then being available, but no others could be secured until daybreak on the 27th, when 60 more were furnished by the French.⁷¹ Meanwhile, on August 25, the chief surgeon learned from his assistant whom he had ordered to accompany the 32d Division that it had halted in the Compiègne forest west of Soissons and would probably remain there for a day or two. The chief surgeon reported as follows:⁷⁰ "Taking a large war map I tried to reach some conclusion concerning the place in the line which the 32d probably would occupy. The subject was discussed with nearly all the staff officers present, but no two opinions were alike. All we could do was guess." Communications with the French Tenth Army disclosed nothing, and no information was obtainable whether the division would enter the lines east or west of Compiègne or near Soissons. After a careful estimate of the situation in the light of such information as he had received from his representative with the 32d Division, the chief surgeon, Paris group, ordered Evacuation Hospital No. 5 to Villers-Cotterets at daybreak on the 27th.⁷¹ On the afternoon of the same date he learned that the 32d had entered the line near Soissons and that Evacuation Hospital No. 5 had reached its destination and was preparing to receive patients.⁷¹ The representative of the chief surgeon, A. E. F., at G-4, G. H. Q., had been authorized to order hospital trains to Villers-Cotterets as required, and arrangements were now made to have two sent promptly the following day if requested.⁷¹ On August 28 Evacuation Hospital No. 5, which had reached its destination on the night of August 27, was operating 600 beds which were being filled rapidly, thus seriously taxing the available hospital beds, but a hospital train arrived and relieved apprehension of hospital congestion.⁷¹ Surgical service was prompt for the hospital had erected its operating and X-ray tents first and had most of its ward tents ready

when patients began to arrive.⁷¹ In advance of this hospital, work was rapid, and evacuation to it prompt, for, though there was some road congestion, the movement of ambulances was so well controlled that casualties were quickly cleared from more advanced formations.⁷² In the rear the hospital train service continued adequate, though after the first train had arrived others could be obtained only through the chief surgeon of the French Tenth Army.⁷² On the 29th patients arrived in unexpectedly large numbers, and by the 30th the operating teams in Evacuation Hospital No. 5 were greatly fatigued, although the chief surgeon of the Paris group had supplied a mobile surgical unit, two operating teams, and one shock team to the 32d Division, to be used with the hospital for nontransportable patients.⁷² Several fresh teams, including a shock team, were therefore sent from Evacuation Hospital No. 4 at Coincy and Red Cross Hospital No. 111 at Chateau-Thierry. Evacuation Hospital No. 5 was now working to capacity, but very satisfactorily.⁷² It was learned that French resources were limited, and had not an evacuation hospital arrived it would have been necessary to send our patients to the rear for operation, as were French patients from a neighboring hospital, with consequent danger of increased mortality from gas bacillus infection.⁷²

At Villers-Cotterets, Evacuation Hospital No. 5 admitted 2,167 patients from the 32d Division, of whom 1,388 were surgical, 411 gassed, and 368 medical. Patients operated here numbered 676 and the number of deaths among those admitted was 12.⁷³

By August 31 the facilities for care of the wounded in the Medical Department units draining its field hospitals (which averaged about 100 a day) were amply sufficient.⁷⁴ Evacuation Hospital No. 4 and Red Cross Hospital No. 110 were at Coincy and Red Cross Hospital No. 111 at Chateau-Thierry. An occasional train was required for the two first mentioned units, but barge service was adequate for Red Cross Hospital No. 111.⁷⁴ After a few days' rest, Evacuation Hospital No. 5 moved to the vicinity of Neufchateau. Shortly afterwards Evacuation Hospital No. 4 transferred its patients to Red Cross Hospital No. 110 and likewise prepared to move, followed by Red Cross Hospital No. 111 a few days later.⁷⁴

On September 8 word was received that the Paris group would soon be broken up. The same date the chief surgeon of the group received orders assigning him to Headquarters First Army. His work was then turned over to an assistant. A few days later all American troops were withdrawn from this area.⁷⁴

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SECTION III

THE ST. MIHIEL OPERATION

CHAPTER XIV

THE FIRST ARMY ^a

While General Pershing's original instructions contemplated the formation of a separate American army, the German offensives of the spring of 1918 had postponed this from day to day. The German March attack first interfered; then, although an agreement was reached, on May 19, looking to an early American concentration in the Woevre, the offensive of May 27 prevented this. On July 14, another conference was held, but without definite result. The German attack, then expected, opened on the 15th, the counter-attack on the 18th, and the conference was renewed on the 21st, after the favorable opening of these operations. The final success of these operations was then uncertain, but it was now arranged that two American armies should be formed, the First Army for temporary service between the Marne and the Aisne, the Second in the proper American region about Toul.

On July 24, the Bombon conference of commanders was held, which decided that all the allied forces should take the offensive. Certain definite operations were agreed upon. These were: (*a*) Continuation of operations on the Marne, with a view of securing, as a minimum result, the release of the Paris—Chalons railway; (*b*) the reduction of the Amiens salient by the British, securing the release of the Paris—Amiens railway; (*c*) release of the mining regions in the north, and elimination of the menace to Dunkirk and Calais; (*d*) reduction of the St. Mihiel salient by the Americans.

At a conference on September 2, at which there were present Marshal Foch, General Pétain, and General Pershing, it was decided that the Americans should undertake two major operations. The first was the reduction of the St. Mihiel salient, to be carried out by the middle of that month; the second, now known as the Meuse-Argonne operation, was to be launched between the 20th and 25th of the month in conjunction with the French Fourth Army, both armies under the direction of General Pétain.

The St. Mihiel salient was very strong, both naturally and artificially. Its western face lay on the Cotes de Meuse; on its southern face were Loupmont Ridge and Montsec, offshoots of the main heights, and the wooded and hilly ground east to the Moselle near Pont-a-Mousson. Still, it was a salient, with the inherent weaknesses of salients.

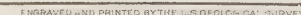
^a Abstracted from Major Operations of the American Expeditionary Forces in France, 1917-1918. Prepared in the Historical Section, the Army War College.

Its offensive value to the Germans lay in the fact that it interrupted communication on the main Paris—Nancy railway, threatening at the same time the entire region from Nancy to Bar-le-Duc, and from Bar-le-Duc to Verdun. For defensive value, it directly covered Metz and the Briey iron country; furthermore, it would have to be reduced before an offensive could be started between the Meuse and the Argonne against the German lateral communications.

The reduction of the salient itself, then, had become necessary; how success should be exploited, whether directly toward Briey or by a separate operation toward Mezieres, was not for American, but for the allied headquarters to say. But the first step, the local operation itself, would mean not only a moral but a material gain, in restoring communications and territory, and in substituting a threat against the German communications for the existing one against the French.

At the beginning of the operation, the enemy line, which had held with few changes for four years, ran along the woods and hills just north of the Pont-a-Mousson—St. Mihiel highway, touching the Meuse at St. Mihiel, then turned north, crossed the Cotes de Meuse, and dropped off into the Woivre plain at Combres, just under Les Eparges; from here it followed the foot of the heights north past Verdun. Behind this line was the fighting area called the Wilhelm zone, following, in a general way, the shape of the salient. The Schroeter zone filled the interior of the salient, behind an organized line from Harville, east of Fresnes, around by Buxieres, northeast of St. Mihiel, to Rembercourt, northeast of Thiaucourt. On the line Harville—Rembercourt began the withdrawal position, which here consisted of two zones, called Michel I and Michel II. The Michel I zone contained an organized position which was connected with the front-line defenses by a switch line at the Braquis salient, north of Fresnes, and on the other flank ran into the outer defenses of Metz. The Michel II zone, behind this, showed little preparation. Wire was a prominent feature of the defenses everywhere; the chief of staff of the American Fourth Corps, after a reconnaissance, characterized the whole salient as a "sea of wire." It was believed, however, that much of the wire was rusted and in poor repair, which proved to be the case.

The general plan for the reduction of the salient called for two simultaneous attacks, one from the south through the wooded country east of Montsec, and one from the west, across the Cotes de Meuse south of Les Eparges. Between the two were to be follow-up and exploitation attacks, amounting to a holding attack against the tip of the salient. Finally, certain exploitation was planned, to be undertaken only on orders from the army commander. The southern and western attacks were divided into three phases. Divisions were to advance as rapidly as possible to the first phase line, regardless of units on their flanks, bringing forward artillery into the captured ground to support further advance. Each corps was then to advance, regardless of the other corps, to the first day line. The second day line was the army objective, and the advance to it was to be made only on army orders.



The intermediate attack was to neutralize the garrison at the point of the salient; follow-up the enemy's attempts to withdraw; prevent his assembling in the *Forêt de la Montagne*, and otherwise protect the flanks of the main attacks; and finally, in conjunction with the flank guards of those attacks, to clear out the whole salient when cut off.

The southern attack was to be made by the American First and Fourth Corps, in order from right to left. The American Fifth Corps was charged with the western attack, and the French Second Colonial Corps with the intermediate, which was to commence after the southern attack had started.

In conjunction with the western attack, the French Second Army was to attack on the left of the American First Army and protect the flank.

The front from Port-sur-Seille to a point opposite Verdun was turned over to General Pershing's command on August 30, and the assembly commenced. It involved not only the moving of 600,000 troops, with great quantities of artillery, but putting together for the first time all the elements of the First Army, and providing for its maintenance directly by our own Service of Supply.

For supply, each of the two attacks was treated as an independent group, with its own system of hospitals, depots, and railheads. The areas involved were new to us, and all army installations had to be planned and placed during the concentration and prior to the actual passing of the command in the front line. This required many arrangements which would have been finished already had the area been occupied by our troops before.

Hitherto, supply had been handled through our regulating station at Is-sur-Tille. But this was 180 km. (111.7 miles) from the south face of the salient, and so was not suitable for forwarding supplies by truck. Besides, that station was much congested at this time, and it was apparent that one such station could not handle the supplies for the army for this operation and at the same time take care of the troops in the advance section of the Service of Supply, and the French Seventh and Eighth Armies south of Nancy. Arrangements were made, therefore, to place an American regulating station at St. Dizier. The capacity of the regulating station here was 1,000,000 men, and it could supply both the American First Army and the French Second Army of 400,000 men.

The right of the American line was held by the First Corps, General Liggett. It extended from Port-sur-Seille east of the Moselle to Limey, crossing the river just north of Pont-a-Mousson. The 82d Division, east of the river, was merely to follow up the attack on the west, which was made by the 90th, 5th, and 2d Divisions, with the 78th Division in reserve. From Limey to Richecourt was the Fourth Corps, General Dickman, with the 89th, 42d, and 1st Divisions in line and the 3d Division in reserve. The French Second Colonial Corps occupied a very broad front, from Richecourt all the way around to Mouilly, with only three divisions, the French 39th, 26th, and 2d Light Infantry Divisions, in line and none in reserve, since their attack was only a follow-up. From Mouilly to Watronville was our Fifth Corps, General Cameron, with the American 26th, French 15th Colonial, and part

of the American 4th Divisions in line, and the rest of the 4th in reserve; the attack was to be made by the 26th and French 15th Colonial, the 4th serving to connect with the French Second Army on the left.

The artillery preparation began at 1 a. m. on September 12, 1918. Though the Germans had commenced their withdrawal from the salient, nevertheless the attack came as a tactical surprise, and they were thrown into the utmost confusion by long-range artillery fire upon the roads. Fire directed against the defenses proper was very effective in tearing up trenches and wire, and driving the enemy under cover. The American superiority was overpowering, especially as the enemy already was in process of withdrawing his guns, so the reaction was very light.

The southern attack started at 5 a. m., September 12, preceded by a rolling barrage, and assisted by French tanks, manned partly by French and partly by Americans. Also engineer detachments went ahead to cut wire. To the infantry the wire did not prove as great an obstacle as had been anticipated. In many places it was old and in bad condition; some gaps had been cut by the artillery, others were made by the tanks and engineers; and the enemy, demoralized by the volume of fire and by the suddenness of the attack, was unable to make a stubborn defense. All initial objectives were taken on schedule time.

The western attack started at 8 a. m. and was equally successful. The French corps in the center moved up as intended, connecting the two attacks and cleaning out the point of the salient.

The entire attack was so evidently successful that the schedule was advanced, and the salient was cut off by a junction of the Fourth and Fifth Corps at Vigneulles early in the morning of the 13th. The advance was halted on the army objective. Artillery was brought up, defense of the line was organized, patrols were pushed ahead, and the lines became stabilized along the front of the Michel I zone, above described. Many units were transferred to the theater of the next operation, the Meuse-Argonne.

The purpose of the operation had been fully accomplished. The salient had been eliminated; and, though the Germans could claim that they had retired "according to plan," nevertheless, they had the distinct impression of "a serious defeat." But more than this, the American Army was now an accomplished fact. For the first time, wire entanglements ceased to be regarded as an impossible obstacle; open warfare training became the preeminent consideration in all forces. The complete success with such small loss gave such a spirit to our troops that they became immediately available for employment in the heavy fighting of the next operation.

The strength of the First Army in the St. Mihiel operation was approximately 660,000 men, of whom about 110,000 were French.¹

MEDICAL DEPARTMENT ACTIVITIES

During the period from the reduction of the Marne salient, with gradually lessening American participation there, to the time of our preparations

for the St. Mihiel operation, shipments of matériel from the United States had relieved somewhat, although far from satisfactory, our critical shortages. In other words, Medical Department personnel and matériel were constantly arriving, but not in proportion to meet initial shortages and at the same time keep pace with the increased needs resulting from augmentation in strength by the arrival of combat troops.²

The medical department, through its G-4 representatives, immediately took steps to cooperate with the chief surgeon of the First Army in providing, so far as possible, adequate hospitalization for the large number of casualties that were anticipated in the forthcoming St. Mihiel operation. As the number of casualties apprehended happily was not realized, we found ourselves for the first time facing a comforting situation of overhospitalization. Had the number of casualties that we had every reason to expect actually developed, the Medical Department would again have found itself short in resources and embarrassed in meeting its obligations. At this time our critical shortages were in personnel, hospital equipment, ambulances, and hospital trains. The shortage in personnel was particularly acute, as we had already withdrawn from base hospitals all the personnel that could be spared without seriously jeopardizing their efficiency. To help out in this emergency, it was necessary to secure authority for the assignment of 1,200 men of the line from the orthopedic training battalion to our mobile sanitary formations. These men suffered from flat-foot, or other joint infirmities, but their acquisition at this critical time tided us over another difficulty.²

The medical service of the American Expeditionary Forces at this time was short thousands of personnel, hundreds of ambulances, and many evacuation hospitals. These conditions necessitated the adoption of dangerous expedients, such as the use of nonmedical personnel, employment of field hospitals as evacuation hospitals, borrowing of ambulances from the French, Italians, and from base hospitals, and the depletion of divisions in training, base hospitals, and other organizations of all the personnel that could be spared. Nearly all such reserves of the Medical Department were placed at the disposal of our First Army, but all it was possible to secure were inadequate for the needs expected.³

Our borrowing resources were exercised to the utmost possibilities. Ambulances and hospital trains were borrowed from the French, who loaned freely. The situation seemed so acute that 15 United States Army ambulance sections sent to Italy direct from the United States for the Italian Government were, through its prompt cooperation, detailed to our service and brought up for use in the engagement.²

The order of battle having been issued, it became evident that separate hospitalization and evacuation facilities would have to be provided for the Toul and Verdun fronts of the salient, respectively. Provision had to be made also for evacuations from the French Second Colonial Corps (now a part of the American First Army).

The tripartite nature of the hospitalization and evacuation required that while the army chief surgeon remain at Neufchateau, both in order to co-

ordinate the Medical Department service of the entire army and to utilize trunk-line telephone service to front and rear, he be represented on each front by officers assigned for that and related purposes. Four medical officers were therefore assigned to the Toul front, one as representative of the army chief surgeon, one as assistant to that officer, while a third was in charge of evacuation from all points west of Toul, and a fourth was director of ambulances. Similar services were performed by two medical officers on the Verdun front.⁴

Because of difficulties, which would have resulted in communication and liaison between the American and French contingents, and because the surgeon of the French Second Colonial Corps was thoroughly acquainted with his sector, no American represented the army chief surgeon on that front. Instead, the surgeon of the French Second Colonial Corps was charged with all duties incident to its evacuation service. Evacuations from the French Second Colonial Corps were to be made to the following points, where French hospitals already were in operation: Pierrefitte, Menil-la-Horgne, Loxeville, Revigny, Void, Vaucouleurs, Commercy, and Lignieres. Also sections of our Evacuation Hospital No. 14 and of our Toul-Justice hospital group were reserved for casualties among French artillery in the Toul area.⁴

Estimates of the number of casualties that would be incurred in this operation varied on the part of the different officers concerned from 30,000 to 75,000. That of the chief surgeon of the First Army was 33,000. For these were provided 6,000 beds in rear of the French Second Colonial Corps, 15,000 in the Toul area, and 4,500 in the Verdun region.⁵

The French Department of Armies in the East was requested to signify what fixed sanitary formations could be turned over to the American First Army by the French Eighth and Second Armies for the Toul and Verdun fronts, respectively. In addition to certain buildings previously assigned—i. e., those occupied by Evacuation Hospital No. 1 at Sebastopol—the French now turned over the following for American use: On the Toul front the entire Justice group of barracks, the Perrin-Brichambault and Luxembourg barracks and French Evacuation Hospital No. 10, all of these at Toul; the French evacuation hospitals at Pagny-sur-Meuse, Trondes, Chaligny, and La Malgrange. On the Verdun front were turned over the evacuation hospitals at Souilly, Petit Maujouy (locations only), Vaubecourt, Benoitte Vaux-Couvent, Rambluzin, La Morlette, and Recourt.⁶ The base hospitals at Neufchateau, Bazoilles-sur-Meuse, Vittel, and Contrexeville were to be reserved for preoperative and serious postoperative cases from the area east of St. Mihiel, and the base hospitals at Chaumont, Rimaucourt, and Langres were reserved for the same class of casualties from the area west of that point. The base hospital at Dijon was to be reserved as a preoperative hospital in the event of the other hospitals becoming overcrowded.⁷

Before troops were mobilized for this offensive, a few army medical units had been installed, as follows, to serve American needs: Evacuation Hospital No. 1, Sebastopol Barracks, 3 km. (1.8 miles) north of Toul; Mobile Hospital No. 39, Aulnois-sous-Vertuzey; Convalescent Unit No. 1, Toul.

Medical formations mobilized for this offensive, including the foregoing, were located at the points now to be mentioned:⁸

Toul Front, Southern Front:

Sebastopol Barracks.—Evacuation Hospital No. 1, Mobile Hospital No. 3, Evacuation Ambulance Company No. 8.

Aulnois-sous-Vertuzey.—Mobile Hospital No. 39.

Toul, Justice group.—Base Hospital No. 45, arrived August 20; Base Hospital No. 51, arrived August 27. These units were established under the jurisdiction of the Service of Supplies and technically were not under Army control. They functioned, however, as evacuation hospitals. Evacuation Hospital No. 14, at Perrin-Brichambault Barracks, arrived August 16. Evacuation Hospital No. 3, same location, arrived August 22. Gas Hospital conducted by personnel from Base Hospital No. 45. Battalion of reclassified soldiers, arrived August 24.

La Marche barracks annex.—Neurologic unit No. 2 (from Base Hospital No. 117) in Favier Barracks, arrived August 25. Army Red Cross Hospital No. 114, in Luxembourg Barracks, arrived September 4. Contagious disease hospital, operated by Contagious Unit 1, already on duty in this area. Ambulance Companies 132 and 319, arrived September 3. Evacuation Ambulance Company No. 7, arrived September 1; Company 10, arrived August 31; Companies 11 and 12, arrived September 9; United States Army Ambulance Section 599, arrived September 1.

Chaligny.—Evacuation Hospital No. 13, arrived August 23; Field Hospital 162, 1st Corps, established August 2.

La Malgrange (near Nancy).—Field Hospital No. 163, established August 22. United States Army Ambulance Section 601, arrived September 6.

Trondes.—Field Hospital No. 161, 1st Corps, established August 27. Mobile Hospital No. 4, arrived August 24. Ambulance Company No. 310, arrived September 3.

Pagny-sur-Meuse.—Evacuation Hospital No. 12, arrived August 29. Field Hospital No. 117, established August 28. Evacuation Ambulance Company No. 4, arrived August 28.

Sorcy.—Evacuation Hospital No. 11, arrived September 11. Field Hospital No. 41 and Ambulance Company 41, established August 28.

Western Front:

Vaubecourt.—Evacuation Hospital No. 9, arrived August 29.

Souilly.—Evacuation Hospital No. 6, arrived August 25, and Evacuation Hospital No. 7, arrived August 24. Evacuation Ambulance Company No. 2, arrived September 13. United States Army Ambulance Service Section No. 521, arrived August 29, United States Army Ambulance Service Section No. 530, arrived September 6.

Petit Maujouy.—Evacuation Hospital No. 8, arrived August 26. Evacuation Ambulance Companies Nos. 1 and 6, arrived August 28.

La Morlette.—Mobile Hospital No. 1, arrived September 5.

Recourt.—Mobile Hospital No. 2, arrived August 28.

Benoite Vaux Couvent.—Neurological Unit No. 1 (from Base Hospital 117), arrived September 2.

Rambluzin.—Gas hospital operated by personnel of Ambulance Company No. 108, arrived August 28.

Froidos.—United States Army Ambulance Service Section No. 602, arrived September 6.⁸

The medical supply dump for the Western Front was located at Souilly, and for the Southern Front at Toul. The French general hospital at Bar-le-Duc provided 2,200 beds for an overflow of American casualties.⁵

The ambulance companies which were attached to all evacuation hospitals were reinforced by busses, both ordinary and sight-seeing.⁹

Ten army ambulance sections were promised by the French, but only three reported. Of these, one was held in reserve and the other two were used for French casualties.⁹

United States Army Ambulance Service Sections No. 520 and No. 570 served the First Army Corps sanitary train; Nos. 542 and 604 served the Fifth Army Corps sanitary train.⁸

Though it was appreciated that the wounded should be moved from the front to hospitals as rapidly as possible, it was evident that their condition upon arrival would be gravely impaired if their transport was hurried or if they did not receive treatment to prepare them for the ambulance journey. This was particularly true of the severely shocked and of those intoxicated by phosgene. Orders were therefore given directing that facilities be provided for preliminary treatment of shocked and gassed cases near the front, and forbidding the speeding of ambulances.¹⁰

The following order, prepared by the army surgeon, gives such directions as were transmitted to the First, Fourth, and Fifth Corps.

HEADQUARTERS FIRST ARMY,
AMERICAN EXPEDITIONARY FORCES,
September 6, 1918.

Annex No. 6 (Field Order No. 9).

Subject: Plan of evacuation of sick and wounded and supply.

I. EVACUATION OF SICK AND WOUNDED

(a) 1st Corps, 4th Corps, and Army Troops

Severely wounded:

Army and corps troops in 1st Division sector, including 1st Division.	Mobile Hospital No. 39 at Aulnois-sous-Vertuzey, $\frac{1}{2}$ km. south of Aulnois on Aulnois—Vertuzey Road.
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All other troops west of Moselle River.	Evacuation Hospital No. 1 at Sebastopol, 5 km. north of Toul on Toul—Menil La Tour Road.
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All troops east of Moselle River-----	Evacuation Hospital No. 13 at Chaligny, 10 km. southwest of Nancy.
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Evacuation Hospital No. 3 in the Justice group of barracks just south of Toul will receive the overflow from the above hospitals.

A careful sorting must be effected at the divisional sorting stations so that these hospitals are not overwhelmed with slight or gassed cases necessitating a secondary evacuation to hospitals to which they should have been sent originally.

Slightly wounded:

Army and corps troops in 1st Division sector (including 1st Division).	Provisional hospital, Sorey R. R. station, about 1½ km. north of Sorey. Reached by one-way road leaving Aulnois—Sorey Road just north of bridge over R. R. and crossing over canal.
4th Corps and army troops adjacent to 4th Corps (less 1st Division).	Provisional evacuation hospital at Pagny-sur-Meuse railroad station. Provisional evacuation hospital, 1½ km. north of Trondes, on Trondes—Menil—La Tour road.
1st Corps and army troops adjacent to 1st Corps.	Evacuation Hospital No. 14 in the Perrin-Brichambault section of the Justice group of barracks just south of Toul.
All troops east of Moselle River-----	Provisional evacuation hospital at La Malgrange, 1 km. south of Nancy on Nancy—Richard—Menil road.
Gassed: All troops-----	Gas hospital, La Marche section of Justice group of barracks just south of Toul.
Contagious: All troops-----	Hospital for contagious diseases in Justice group of barracks just south of Toul.
Sick, nervous and shell concussion: All troops.	Base Hospital No. 45, La Marche section, and Base Hospital No. 51, Favier section of Justice group of barracks just south of Toul.
Army artillery: U. S. and French----	Evacuation ambulance companies will be stationed; one at Dieulouard, one at Domevre-en-Haye, and one at Cornieville, subject to call of regimental or battalion commanders of army artillery units for transportation of wounded from first aid stations to evacuation hospitals as designated above.

(b) 5th Corps

Severely wounded: All troops-----	Evacuation Hospital No. 8, at Petit-Maujouy, 1½ km. east of Senoncourt on Senoncourt—Ancemont road. Mobile Hospital No. 2, at Recourt. A careful sorting must be effected at divisional sorting stations to preclude the danger of these hospitals being overwhelmed with slight or gassed cases necessitating a secondary evacuation to Souilly, where they should have been sent originally.
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Slightly wounded and sick: All troops----	Evacuation Hospitals Nos. 6 and 7 at Souilly. Evacuation Hospital No. 9 at Vaubecourt.
Gassed: All troops-----	Gas hospital, Rambluzin, 3 km. east of Heippes, on Heippes—Recourt road.
Nervous and shell concussion: All troops.	Benoite-Vaux, 7 km. southeast of Souilly on Recourt-Neuville road (selected cases).

(c) 2d Colonial Corps (French)

As prescribed by Corps Commander.

II. EVACUATION OF ANIMALS

1st and 4th Corps-----	To army evacuation stations at Jeanne d'Arc Caserne, 3 miles east of Toul, on Toul—Nancy road.
5th Corps-----	To army animal evacuation station at Souilly.
2d Colonial Corps (French)-----	As directed by corps commander.

III. RAIL HEADS

1st Corps:

82d Division.....	Belleville.
90th Division.....	Belleville.
5th Division.....	Gare-de la-Ferme-Boyer.
2d Division.....	Gare-de la-Ferme-Boyer.
78th Division.....	Toul.
Corps troops.....	Belleville.

4th Corps:

89th Division.....	Manoncourt.
42d Division.....	Manoncourt.
1st Division.....	Sorey.
3d Division.....	Toul.
Corps troops.....	Manoncourt.

5th Corps:

26th Division.....	Rattentout.
4th Division.....	Rattentout.
Corps troops.....	Rattentout.

2d Colonial Corps (French)..... As directed by corps commander.

Army reserve:

35th Division.....	Champigneulles.
91st Division.....	Sorey.
Army troops.....	As separately assigned.

* * * * *

NOTE.—The hospitals at Trondes, operated by Field Hospital 161, Ambulance Company 161, and Mobile Hospital No. 4 were omitted from the battle order and were but little used in comparison with others. However, had any severe resistance been encountered by the center divisions they would have been our foremost evacuation center. From this point, in contradistinction to others, any required number of hospital trains could have been dispatched.

The activities of certain army units of the Medical Department will be discussed below, after the histories of the several divisions engaged have been given.

An agreement was made with the French for placing 45 of their hospital trains at the disposal of our regulating officer at St. Dizier. These, with the 20 American trains already available, it was thought would be sufficient.⁴

American hospital trains were to be employed for the long hauls to base hospitals in the intermediate and base sections which required travel from 8 to 24 hours, and the French trains were to be used for evacuations to the base hospitals in the advance section.⁷

The plan of train evacuations was essentially that adopted and issued as an order by General Headquarters on the 29th of August, 1918. The regulating station at Is-sur-Tille was to receive reports concerning bed space direct from the base hospitals in the advance section and from the chief surgeon, S. O. S., for the base hospitals in the intermediate and base sections. This regulating station then allotted beds in all base hospitals to the regulating station at St. Dizier, which handled the train evacuations from the First Army area.⁷

Secondary evacuations—that is, from one base hospital to another—were regulated by the Is-sur-Tille station.⁷

As the battle developed, the vast majority of the casualties drained into the evacuation and base hospitals in and about Toul. Train evacuations were immediately begun as the casualties arrived, but as the operation succeeded even beyond the highest hopes, the number of these happily was so small that the system of train evacuations adopted for this engagement was never actually given a thorough trial.⁷

As mentioned elsewhere, there were only 17 hospital trains dispatched from the Toul front, which evacuated 6,539 cases, including a large number of sick to make room for battle casualties, and only 5 trains from the Verdun front, evacuating 725.⁷

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- (2) Report on activities of G-4-B, medical group, fourth section, general staff, G. H. Q., A. E. F., by Col. S. H. Wadhams, M. C., chief of section, December 31, 1918, 56. On file, Historical Division, S. G. O.
- (3) Medical activities of the American Expeditionary Forces in the Zone of the Armies, by Col. A. N. Stark, M. C., chief surgeon, First Army, undated, 11. On file, Historical Division, S. G. O.
- (4) Final report of chief surgeon, First Army, upon the St. Mihiel and Meuse-Argonne offensives, undated, 4, 5. On file, Historical Division, S. G. O.
- (5) Medical activities of the American Expeditionary Forces in the Zone of the Armies, by Col. A. N. Stark, M. C., chief surgeon, First Army, undated, 9. On file, Historical Division, S. G. O.
- (6) Final Report of chief surgeon, First Army, upon the St. Mihiel and Meuse-Argonne offensives, undated, 2. On file, Historical Division, S. G. O.
- (7) Evacuation system of a field army, by Col. C. R. Reynolds, M. C., chief surgeon, Second Army, undated, 27. On file, Historical Division, S. G. O.
- (8) Letter from chief surgeon, First Army, to assistant chief of staff, G-3, February 6, 1919. Subject: Report of Medical Department units, First Army. On file, Historical Division, S. G. O.
- (9) Final report of chief surgeon, First Army, upon St. Mihiel and Meuse-Argonne offensives, undated, 5. On file, Historical Division, S. G. O.
- (10) Evacuation system in the Zone of the Armies, by Col. A. N. Stark, M. C., chief surgeon, First Army, undated, 1. On file, Historical Division, S. G. O.

CHAPTER XV

THE FIRST CORPS (82D, 90TH, 5TH, 2D, AND 78TH DIVISIONS)

As has been stated in the preceding chapter, the First Corps in the St. Mihiel operation, comprised the 82d, 90th, 5th, and 2d Divisions, with the 78th Division in reserve.¹

On September 11, 1918, the First Corps held a 19-km. (11.8 miles) sector, from Limey to Port-sur-Seille. The 82d Division held the sector from Port-sur-Seille to Bois le Pretre, the 90th Division from the eastern edge of Bois le Pretre to Limey. The 5th and 2d Divisions were disposed in depth behind these detachments, the 5th Division from Mamey to Remenauville, the 2d Division from Remenauville to Limey.²

Artillery preparation for the attack began at 1 a. m., September 12. The infantry attack began at 5 a. m. the same morning, on a front extending from Limey to Fey-en-Haye.²

The advance to the first phase line was made according to schedule. Progress to the army objective was rapid, and by 3 p. m., September 12, this objective had been attained.²

The second day of the operation, September 13, the position of the 2d and 5th Divisions was organized. The 90th Division exploited its advance of September 12, took the town of Vilcey and the Bois de Presle, and established outposts 0.5 km. (0.31 mile) south of Norroy.² The 82d Division, maintaining contact with the right of the 90th Division, captured Norroy.

On September 14, further exploitations by the 90th Division advanced the line beyond Villers-sous-Preny.²

On September 15, conditions were stabilized and the sector was fairly quiet.²

Throughout the operation, transportation of supplies and traffic control were the greatest problems. Previous to the attack, all movements were made at night to maintain secrecy of movement. As it had been generally cloudy and rainy for the week preceding the attack, the nights were exceedingly dark.² After the advance across No Man's Land, secrecy of movement was no longer essential, but traffic over the destroyed roads moved slowly, even by day.²

For the routes of communication, supply, and evacuation of the divisions of the corps, during the St. Mihiel operation, the following order was issued:

G-1-107

HEADQUARTERS FIRST ARMY CORPS,
6 September, 18—11.00 a. m.

Annex 7 (to F. O. 49)

PLAN OF COMMUNICATIONS, SUPPLY, AND EVACUATION

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8. Plan of evacuation of sick and wounded:

1. Sanitary organization.

(a) Battalion aid stations, relays of litter bearers, and regimental aid stations will be established by regimental surgeons under the supervision of their respective Division.

Surgeons. *In no case will a battalion or regimental aid station be located at the same place as the regimental P. C.*

- (b) Sorting and advance dressing stations (trriages) will be established as follows:
 2d Division, Noviant-aux-Pres.
 5th Division, Martincourt.
 90th Division, Griscourt.
 82d Division, Dieulouard.

These stations will be located off the main traffic route, preferably just outside of the town. This to avoid congestion and traffic blocks.

Regulations governing evacuation from triages as prescribed in Memorandum G-1-48, these headquarters, September 3, 1918.

- (c) Evacuation points:

Seriously sick and gas cases.—Evacuation Hospital No. 45, Justice barracks, Toul.

All surgical cases (wounded and civil surgery), Evacuation Hospital No. 1, Sebastopol, just north of Toul.

- (d) *Evacuation routes:*

2d Division, via its axial road as far as Royaumeix; thence on the Menil-la-Tour—Toul road to destination.

5th Division, via its axial road to Villiers-en-Haye; thence S. E. to the Dieulouard—Toul road, and on that road to destination.

90th Division, via its axial road to Dieulouard; thence on Dieulouard—Toul road to destination.

82d Division, direct from Dieulouard on the Dieulouard—Toul road to destination.

(e) Army and corps troops (both French and American) will use the evacuation system and units of the nearest division.

(f) The sanitary units of the 78th will be held subject to the call of the corps surgeon for use where needed. If this division reinforces the line it will use the sanitary organizations and system of evacuation of the division it reinforces or relieves.

(g) If additional transportation is needed, call will be made on the corps surgeon, who has at his disposition the ambulance companies of the 78th Division and those of the corps. If conditions warrant it the corps surgeon may use two ambulance companies of the 82d Division.

(h) The corps surgeon will make every effort to use returning empties on the narrow gauge line to assist in evacuation. Triages have been located with this in view, and as far as practicable in making forward locations of triages this point should be considered by division and the corps chief surgeons.

9. Evacuation of animals:

1. Corps advance collecting point.

In point of woods just south of the Rau d'Esch, between Gezoncourt and Griscourt.

The corps veterinarian will have charge of this station and the corps mobile veterinary hospital located there.

2. Emergency evacuations may be made direct on proper notification to the corps veterinarian. For other evacuations and evacuation of large numbers, arrangements will be made with G-1, these headquarters.

* * * * *

ADDENDA

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Paragraph 8, plan of evacuation of sick and wounded, changes and additions:

(a) Seriously wounded of all troops east of Moselle River: To Evacuation Hospital No. 13 at Chaligny, 10 kilometers, southwest of Nancy.

NOTE.—Overflow of seriously wounded from Evacuation Hospitals No. 1 at Sebastopol and No. 13 S. W. of Nancy go to Evacuation Hospital No. 3 in the Justice group of barracks just south of Toul.

(b) Slightly wounded:

1st Corps and army troops adjacent to 1st Corps.	Evacuation Hospital No. 14, in the Perrins-Richambault section of the Justice group of barracks just south of Toul.
All troops east of Moselle River-----	Evacuation hospital at La Malgrange, 1 kilometer south of Nancy on the Nancy—Richard—Menil road.

(c) Gassed:

All troops-----	Gas hospital, La Marche section of the Justice group of barracks just south of Toul.
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(d) Contagious:

All troops-----	Hospital for contagious diseases in Justice group of barracks just south of Toul.
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(e) Sick, nervous, and shell concussion:

All troops-----	Base Hospital No. 45, La Marche section, and Base Hospital No. 51, Favier section of Justice group of barracks just south of Toul.
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(f) Evacuation route: For troops east of the Moselle River, Atton—Bezaumont—Autreville—Millery—Custines—Bouxieres—Nancy.

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MEDICAL DEPARTMENT ACTIVITIES

The Medical Department problems of the First Corps during the St. Mihiel operation were relatively simple of solution. There was a limited objective, distances were comparatively short, transportation was sufficient, and hospitalization ample, casualties being far below what had been anticipated and prepared for. The only real difficulties were those incident to road obstruction and consequent congestion. Prior to the opening of this operation, no traffic beyond what was normal had been permitted by day. Night traffic, however, was enormous, and as several nights were rainy, especially the night preceding the attack, roads became much congested and progress often was distressingly slow. However, there was no alarming check such as occurred later in the Meuse-Argonne operation.³

For transportation, in addition to the division ambulances and trucks, the First Corps had its sanitary train of three motor ambulance companies, and seven additional ambulance companies supplied by the First Army and placed under the control of the corps surgeon. This supply was ample. The three field hospitals belonging to the corps sanitary train were borrowed by the First Army and used by it as evacuation hospitals at Chaligny and La Malgrange during this operation. After the operation they were returned and functioned as an important part of the corps evacuation system during operations in the Meuse-Argonne.⁴ Evacuation worked smoothly. As the enemy's resistance was feeble, battle-field conditions were at no time very insanitary. The corps medical service was faced with the same problems as in the operations near Chateau-Thierry, but they gave much less concern and their solution was less difficult.⁴

On August 26 the following circular was published by the corps surgeon:⁵

Memorandum to all division surgeons, First Army Corps:

For the purpose of securing uniformity in splinting and the best results in fracture cases, the following instructions are issued:

1. All fractures are to be splinted at the earliest possible moment. This means where the man falls, if possible. If this is impossible, the splint should be applied at the battalion aid post. No fracture should pass through the advanced dressing station unsplinted.

2. The Thomas full or half ring extension splint will be used for all fractures of the lower extremities from the pelvis to the ankle.

3. The Cabot posterior wire splint or wire ladder splint is to be used for all wounds of the ankle and foot and of the knee joint without fracture of the long bones.

(NOTE.—*All wounds of knee are to be splinted, no matter how slight they may be.*)

4. The hinged traction arm splint will be used for fractures of the humerus, elbow, and upper forearm.

5. Ladder and wood splints will be used in fractures of the long bones where traction splints can not be efficiently applied and also to supplement such splints.

6. The fact that traction is the immobilizing factor in all traction splints should never be lost sight of, and the utmost care should be taken to apply the proper degree of traction to obtain fixation.

7. Bring this to the attention of the division orthopedist and see that these instructions are carefully followed.

When Field Order No. 49, September 6, 1918, was issued it was not known that ambulance companies mentioned under subparagraph "g," paragraph 8 above, would be available. Subparagraph "h" of the field order in question was added by A. C. of S., G-1, of the corps after consultation with corps surgeon. The latter notified G-1 of his desire to use these narrow-gauge railway lines if practicable and stated that triages had been placed with their utilization in mind. G-1 concurred and added the subparagraph to the order. As a matter of fact these "empties" were not used, ambulance transportation being ample and more practicable.⁶

One company of Pioneer Infantry to make burials was assigned to each division participating in the advance, except with the 90th Division.⁶ Only one-half a company was allotted to it, as this division had not been assigned as active a part as had others and it was not expected that it would suffer many casualties, its special mission being to protect the right flank of the southern advance.⁶ No Pioneer Infantry was assigned to the 82d Division, as it was simply to hold its position and it was not anticipated that the number of dead on the battle field would be large, and these the division could inter without assistance.⁶

The following was inserted as paragraph 12 of Annex 7, Field Order No. 49, September 6, 1918:⁷

12. Burials:

(a) Every effort will be made to promptly and properly bury the dead and to secure proper identifications.

(b) Dead animals will be promptly buried to avoid pollution of water sources.

(c) To assist in the burial of the dead and for salvage work within divisions the Corps Engineer will furnish labor as follows:

To the 2d Division, 1 company of Pioneer Infantry.

To the 5th Division, 1 company of Pioneer Infantry.

To the 90th Division, one-half company of Pioneer Infantry.

These troops will work with divisional graves registration units and salvage units under the supervision and direction of division quartermasters.

* * * * *

Burial troops, it will be observed, were detailed to work under the division quartermaster. This plan did not prove entirely satisfactory, and they were detailed later to work under the division sanitary inspector, an arrangement which proved more so.⁷ With these special burial details available, battlefield conditions were much improved over those previously existing. The dead were buried promptly, and though dead animals were not disposed of as satisfactorily as was desired, conditions never became actually insanitary.

In addition to their burial duties, these Pioneer Infantry troops were required to do salvage work; but this was soon found to interfere considerably with prompt disposition of the dead, and later the troops in question were detailed for burial work exclusively during battle activities. During quiet periods they were utilized for other duties.⁷

The corps sanitary inspector was especially concerned in the supervision of burial groups and in examination and purification of water supplies.

The consultants, now well organized and familiar with their work, promoted appreciably the professional services within divisions. While, as hauls were short, no surgery was performed in advance of evacuation hospitals, the surgical consultant had little to do at the front. In other specialties, however, the consultants were very active in divisions and by continued inspections were able to discover and correct defects, to recognize and encourage good work, and to keep the corps surgeon accurately and promptly informed concerning professional service.

The prevention and treatment of surgical shock and hemorrhage were thus made the duty of medical officers generally in order that operating surgeons might devote themselves exclusively to surgical interference.⁸

THE 82D DIVISION

Commencing on the night of August 15-16, the 82d Division relieved the 2d Division in the Marbache sector astride the Moselle River and held this sector in the St. Mihiel operation, September 12 to 16. During this operation it advanced the left of its line, to maintain connection with the 90th Division, at the same time retaining contact with the French 125th Division on the right. It captured Norroy, September 13, and Vandieres on the 15th.

MEDICAL DEPARTMENT ACTIVITIES

AMBULANCE COMPANIES

Headquarters of the ambulance company section and of Ambulance Company No. 325 had been established at Millery, on August 15. The latter at once established a dressing station at Pont-a-Mousson, where it remained throughout the St. Mihiel operation. Subsequent to that action it assumed the character of a triage.¹⁰ United States Army Ambulance Section No. 647

was also stationed at Millery during this operation. Ambulance Company No. 326 was placed in reserve at Champigneulles.¹⁰

Ambulance Company No. 327, with headquarters at Dieulouard, established a dressing station at Blenod-les-Pont-a-Mousson, and after the operation located another at Norroy on the afternoon of September 16, there taking over the regimental aid station of the 328th Infantry.¹⁰

Ambulance Company No. 328 and United States Army Ambulance Service Section No. 647 also established headquarters at Millery.¹⁰ Before the action, ambulances were pooled, the light ones being ordered to work between regimental or battalion aid stations and the ambulance company dressing station, and the heavy vehicles to work from this point to the triage. Patients were removed from the triage by evacuation ambulance companies.¹⁰

FIELD HOSPITALS

Field Hospitals Nos. 325, 326, and 327 were stationed at Millery in a large French hospital which had been turned over to them for the care of sick, gassed, and seriously wounded patients, respectively.

Field Hospital No. 328 was located at Dieulouard, where it established a triage for troops on the left bank of the Moselle. This unit occupied a tannery which afforded ample housing facilities and was situated beside a good road so that it was readily accessible to ambulances. The location was shelled during four nights and on the morning of September 17 was struck by a shell which killed 6 and wounded 4 of the personnel on duty. No patients were injured, there being but few in hospital at the time.¹¹

Casualties did not begin to arrive at the triage until about eight hours after the preparatory barrage had begun, September 12. During this offensive the enemy used phosgene and mustard gases, and about 600 men affected by them were received. Many of these were evacuated to the rear, but some were held for 48 hours and then returned to duty. Apparently only a few were badly affected, though it was difficult to estimate delayed effects, as a number of these patients were evacuated very shortly after admission to hospital.¹²

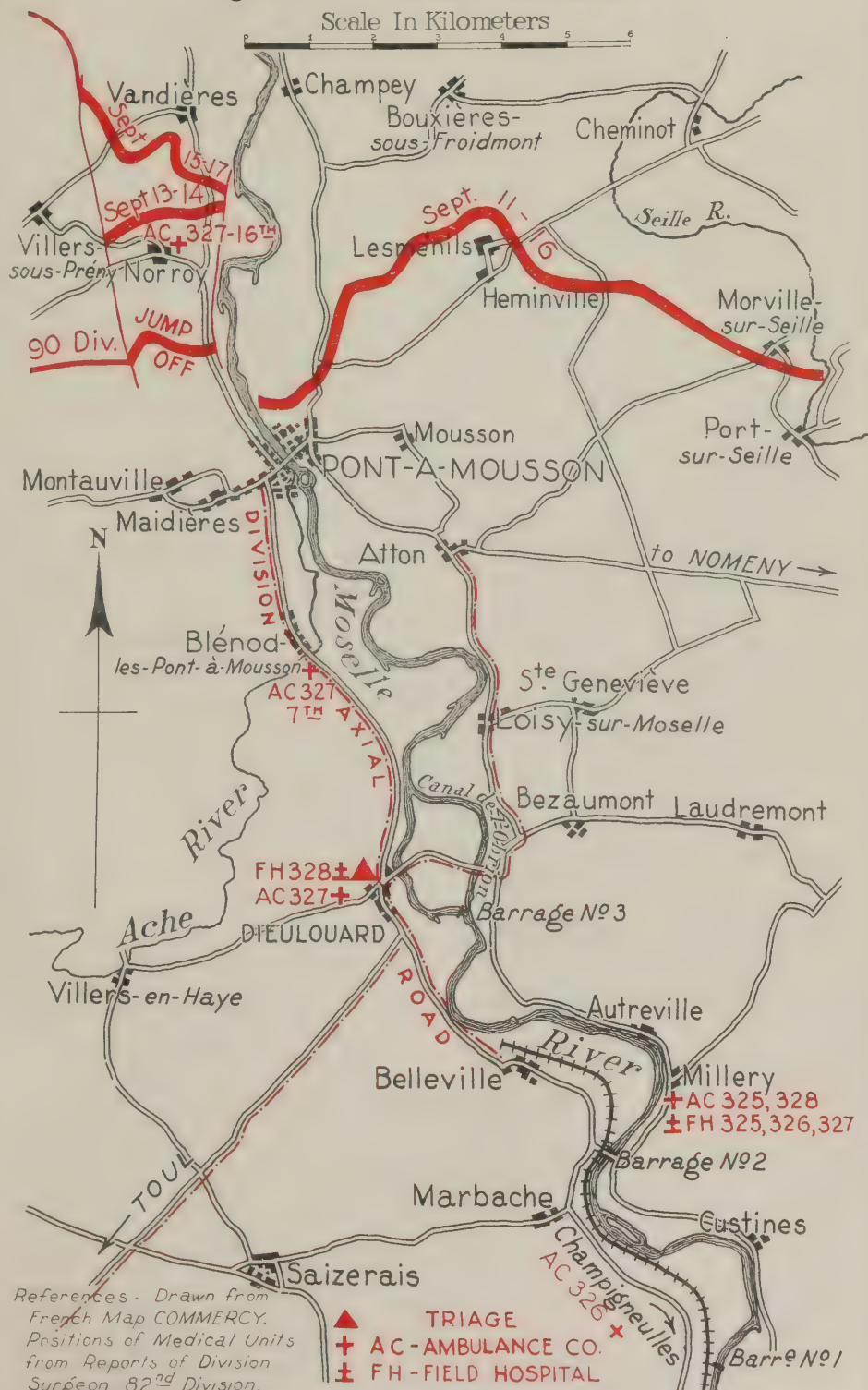
The largest number of casualties in this division during the St. Mihiel operation came from the 328th Infantry. This was because the 328th Infantry was the only regiment of the division west of the Moselle and the only one involved in the attack.

THE 90TH DIVISION

On the morning of September 12, 1918, the 90th Division held an irregular front line which extended from a point west of Fey-en-Haye to a point northwest of Montrichard.¹³

At 5 a. m., the division attacked, with its two infantry brigades side by side, the 179th Brigade on the left and the 180th Brigade on the right. The right of the 180th Brigade did not advance on the first day.¹⁴

The advance of the 357th Infantry, 179th Brigade, kept well up with the barrage, and reached the first day's objective at 1 p. m. The advance of the



358th Infantry was frequently checked by enemy machine guns and snipers, but at 11.27 a. m. the first day's objective was reached.¹⁴

In its operations, September 12-14, the division occupied Vilcey-sur-Trey, Neuf Moulin Ferme, and Villers-sous-Preny; and from September 15-16 it advanced to and occupied Les Huit Chemins, and captured Hill 327, northwest of Vandieres.¹³

MEDICAL DEPARTMENT ACTIVITIES

All sick patients had been evacuated from the field hospitals on the night of September 11-12.¹⁵ The divisional supply unit was located at Griscourt at the triage (Field Hospital No. 357), with instructions concerning exchange of litters and blankets, both at the triage and at the dressing stations. During the succeeding busy days there was very little complaint of litter shortage.¹⁵

During this offensive the division surgeon's office was located at Villers-en-Haye in the rear echelon of division headquarters, in close touch with G-1.¹⁶

Collecting stations for advance companies and battalions aid stations were established by regimental surgeons after consultation with the division surgeon, but after the advance began they were located by battalion surgeons in accordance with their needs.¹⁶ The companies were served by two enlisted men of the Medical Department attached to each and by litter bearers detached from the line. Battalion aid stations were kept well supplied with medical department matériel. All regimental aid stations moved forward to their organization control posts.¹⁶

When, as was the case, a shortage of bearers in the battalions was reported, litter bearers from Ambulance Companies No. 357 and No. 359 were sent forward and assigned to the battalion surgeons in greatest need of their services.¹⁷ Ambulances returning to the point carried food and canteens full of hot coffee to the wounded and to litter bearers of organizations at the front. The battalion surgeons and their personnel worked under the most trying and exhausting conditions, with no rest, and, at times, little food.¹⁷

During the offensive, dental surgeons and their assistants were attached to regiments, where they performed first-aid service under the same conditions as other Medical Department personnel.¹⁷

Owing to the rapid advance and to bad roads, the medical carts could not go forward with their battalions, and supplies had to be carried to aid stations by enlisted men. For this reason much property was temporarily discarded; later it was collected by the supply officer.¹⁸

Liaison was maintained by means of runners, between dressing stations and regimental surgeons, who were relied upon to maintain communication with the battalion stations. Five selected men from Ambulance Company No. 357 and an equal number from Ambulance Company No. 359 were detailed for this duty with the surgeons of the 179th and 180th Brigades, respectively. Each of these groups was under the direction of one of its members, who was held responsible for results. The arrangement proved satisfactory and was continued throughout subsequent operations.¹⁵ Bicycles salvaged after the initial advance were of considerable assistance in main-

taining contact between forward stations, while between dressing stations, triage, and field hospitals, motorcycles and ambulances were employed for this purpose.¹⁵

AMBULANCE COMPANIES

Ambulance companies were distributed as follows: Company No. 357, with a dressing and degassing station, at Jone Fontaine, served the 179th Brigade. Next day (September 13) it established an advance station at Fey-en-Haye.¹⁵ Until the road through Norroy was opened on the afternoon of September 14, only one road, that through Fey-en-Haye, was available for ambulances, and after the initial advance all forward roads were almost impassable because of barricades, wire entanglements, and other obstacles.¹⁵ As the road through Norroy was under enemy balloon observation and subject to direct shell fire, it soon had to be abandoned.¹⁵ On the 14th this company and Ambulance Company No. 359 were each aided by six ambulances from Ambulance Company No. 358.¹⁹

Ambulance Company No. 358, with a dressing station at Gezoncourt, served the Artillery, furnishing vehicles to other companies, as above noted.¹⁶

Ambulance Company No. 359, which had established a dressing and degassing station at Jezainville, served the 180th Brigade on the right of the line. The next day it advanced its station to Montauville.¹⁶

Ambulance Company No. 360 was located at Joli Ferme near Griscourt, where it was technically in reserve though actually occupied in the removal of the sick.¹⁵ On the night of September 11-12 it sent forward half its bearer section to reinforce Ambulance Company No. 359.¹⁵

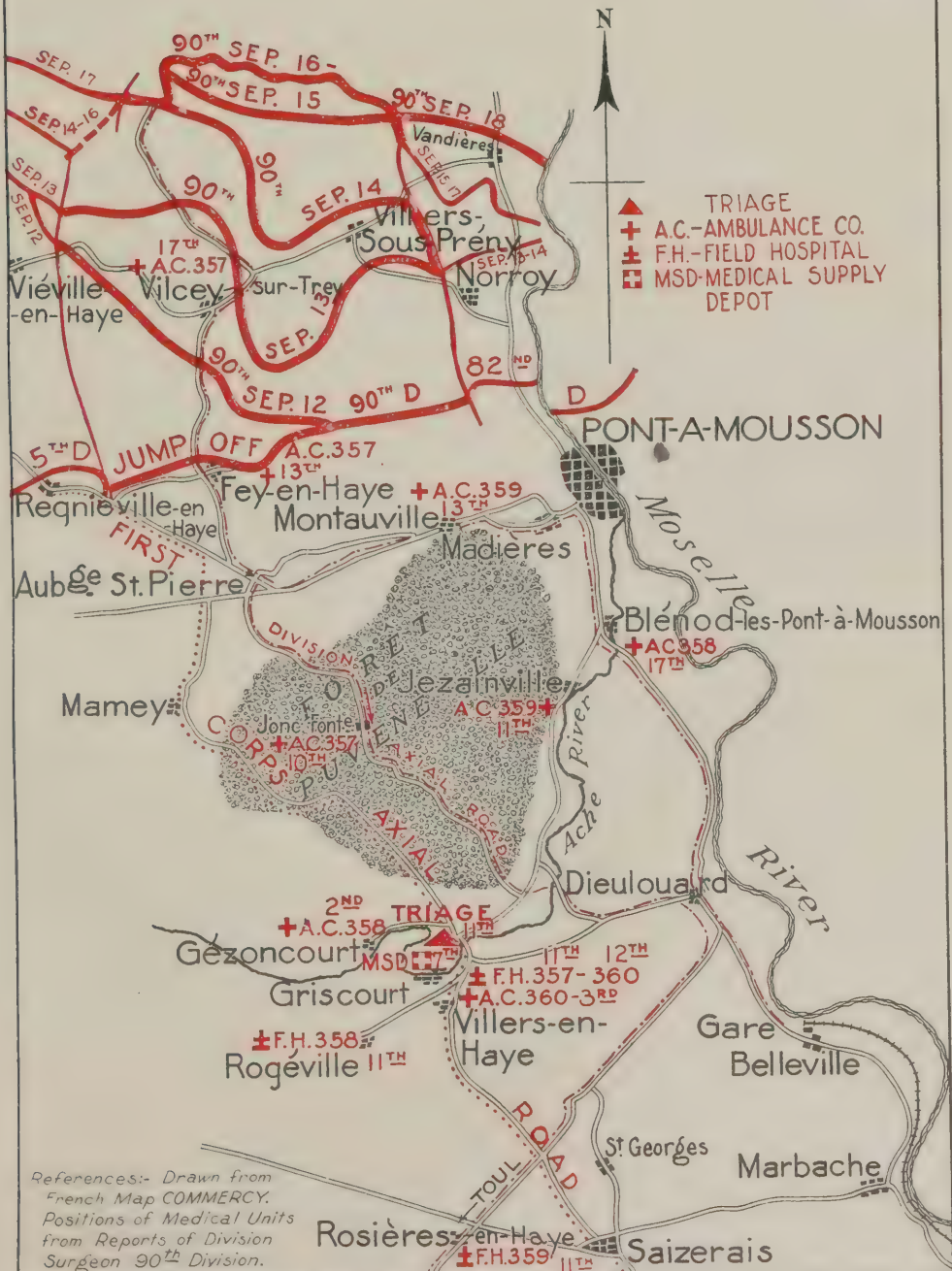
On the morning of September 12 the litter bearer sections of Ambulance Companies 357 and 359, supplemented by 80 men from Ambulance Company 360, went forward to battalion aid stations, and by 8 o'clock patients were arriving at the triage. From that time the flow of casualties was constant, most of the first day's patients coming from the 358th and 359th Infantry Regiments. During the first few days there were comparatively few gassed patients, but subsequently the percentage was high.¹⁵

Throughout the occupation of the Toul sector, ambulances drove directly to battalion aid stations, almost without exception, and carried the wounded to the triage. Much tedious drudgery was thus saved the litter bearers, and wounded men reached the triage from one to three hours earlier than otherwise would have been the case. In one instance patients loaded near Norroy reached Evacuation Hospital No. 1 at Sebastopol barracks within three hours after being wounded.²⁰ On an average, patients received at battalion aid stations were at the triage an hour and a half later. The average time consumed in getting a patient from the place where his wound was received to the triage was not more than four hours.²⁰

During operations in this sector all truck transport for the ambulance companies was pooled under the supply officer of the sanitary train, subject to G-1, section headquarters, 90th Division, and trucks were sent where needed. Ambulance companies furnished drivers but were not assigned trucks except upon requisition.²⁰

ST. MICHEL
90TH DIVISION

Scale In Kilometers



References:- Drawn from
French Map COMMERCY.
Positions of Medical Units
from Reports of Division
Surgeon 90th Division.

Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.



During September 12 it became necessary to call on G-1 of the division for additional transportation to evacuate the triage. Several touring cars were furnished in addition to those in use by the division surgeon and the sanitary train; trucks were also used to transport slightly wounded men to Sebastopol. At 3.30 p. m. an appeal was made to the corps surgeon for ambulances and trucks, but none were available. At 1 a. m., on the 13th, 15 large trucks were furnished by G-1 of the division, for one trip only, to be returned in five hours. This necessitated evacuation of patients to Field Hospital No. 359 at Rosieres-en-Haye instead of to Toul.²⁰

FIELD HOSPITALS

Field hospitals were located as follows: No. 357 at Griscourt operated the divisional triage, its personnel being supplemented by the consultants in surgery, orthopedics, and psychiatry and by the divisional gas officer.²¹ Field Hospital No. 358 at Rogeville, received the gassed and slightly sick.²¹ Field Hospital No. 359, near Rosieres-en-Haye, had been designated as the unit to care for severely wounded patients, but owing to a corps order forbidding major operations in field hospitals, it received only minor cases.²¹

Field Hospital No. 360 was ordered to transport its equipment to Camp Jone Fontaine, but its personnel was on duty at Field Hospital No. 357, where it assisted the triage personnel by serving as night relief.²¹

Patients passing through the triage were evacuated as follows: Gas and slight medical cases to Field Hospital No. 358; surgical cases to Evacuation Hospital No. 1, Sebastopol; psychoneuroses and serious medical cases to Base Hospital No. 45, Toul, for further distribution.²¹ Except for limited transportation facilities, evacuation was easy, for roads were direct, in good condition, and free from shell fire.²¹

THE 5TH DIVISION

Commencing on September 8, the 5th Division took its place on a line running from just southeast of Remenauville to about 1 km. (0.6 mile) northeast of Regnieville, on the southern face of the St. Mihiel salient.²²

The divisional order concerning the plans of communication, supply and evacuation read as follows:

Secret Field Order

No. 41.

5TH DIVISION, 9 Sept., 18—12 hours.

Maps: Commercy, 1/80000

Chambley }
Bois de Prete } 1/20000

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Annex No. 7 to Field Orders #41

PLAN FOR COMMUNICATION, SUPPLY, AND EVACUATION

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2. Roads.

(a) Corps axial road: Saizerais—Villers-en-Haye—Griscourt—thence northwest through the Foret de Puvenelle to Mamey—Regnieville—Thiaucourt—Charey.

(b) Axial road of the Fifth Division: Ferme Boyer—north to the Manoncourt—Roy-aumeix road—east to Manoncourt—Tremblecourt—northeast to Villers-en-Haye—Gris-court—northwest through the Forêt de Puvenelle—Mamey—Regnieville—northwest to cross roads one kilometer east of La Griziere Farm—one kilometer east of La Griziere Farm—thence to Vieville-en-Haye—northwest to Jaulny, thence north to Rembercourt and northeast along railroad.

* * * * *

9. Evacuation of sick and wounded.

(a) Battalion and regimental aid stations will be located in the rear of their organizations at places designated by regimental surgeons after consultation with regimental commanders.

(b) Regimental surgeons will keep in touch with the units of the sanitary train in the rear. Upon location of the regimental dressing stations, they will notify the officer in charge of the ambulance dressing station as to its whereabouts. Routes from regimental aid stations will be marked by the regimental medical personnel.

(c) An ambulance dressing station will be located on the Metz road near the bridge crossing the Ache River. Those who are wounded during the early part of the engagement will be brought to that point.

(d) As the advance is made it may be found that a number of casualties occur and that the litter bearer force is insufficient for their transportation to the rear. Regimental surgeons will then establish collecting stations for twenty (20) or more wounded making use of such shelters as are available, preferably near roads, and will notify the ambulance dressing stations where the wounded are to be found.

(e) Upon receipt of such notification, ambulances will be sent to evacuate the wounded or, if the number of wounded is sufficient, an ambulance dressing station will be established by the director of ambulance companies at the place.

(f) The first ambulance dressing station will be established by personnel of Ambulance Company #17 on the Metz road. The second ambulance dressing station may be established in the vicinity of Regnieville-en-Haye. The third ambulance dressing station a point about two kilometers in advance of the second. As soon as the first dressing station is cleared, its personnel will be available for establishment of another dressing station. This work will be conducted by the director of ambulance companies under supervision of the commander of the sanitary train.

(g) The triage will be located at Camp-de-Cirque, eight hundred (800) meters north of the cross roads at St. Jean. Messages to the commander of the sanitary train and the director of ambulance companies will be sent to the triage by returning ambulances.

The following information will be sent:

- (1) The number and location of wounded and gassed to be evacuated.
- (2) Notification of establishment of advanced ambulance dressing stations.
- (3) Requests for splints, dressings, and other material.
- (4) Such other data as may be necessary to enable the commander of the sanitary train to promptly furnish required transportation and assistance.

(h) Tetanus antitoxin will ordinarily be administered at regimental dressing stations, notation being made upon the diagnosis tag of the patient. Administration of morphine will likewise be noted.

(i) Severe casualties will be evacuated by ambulance, preference being given as follows:

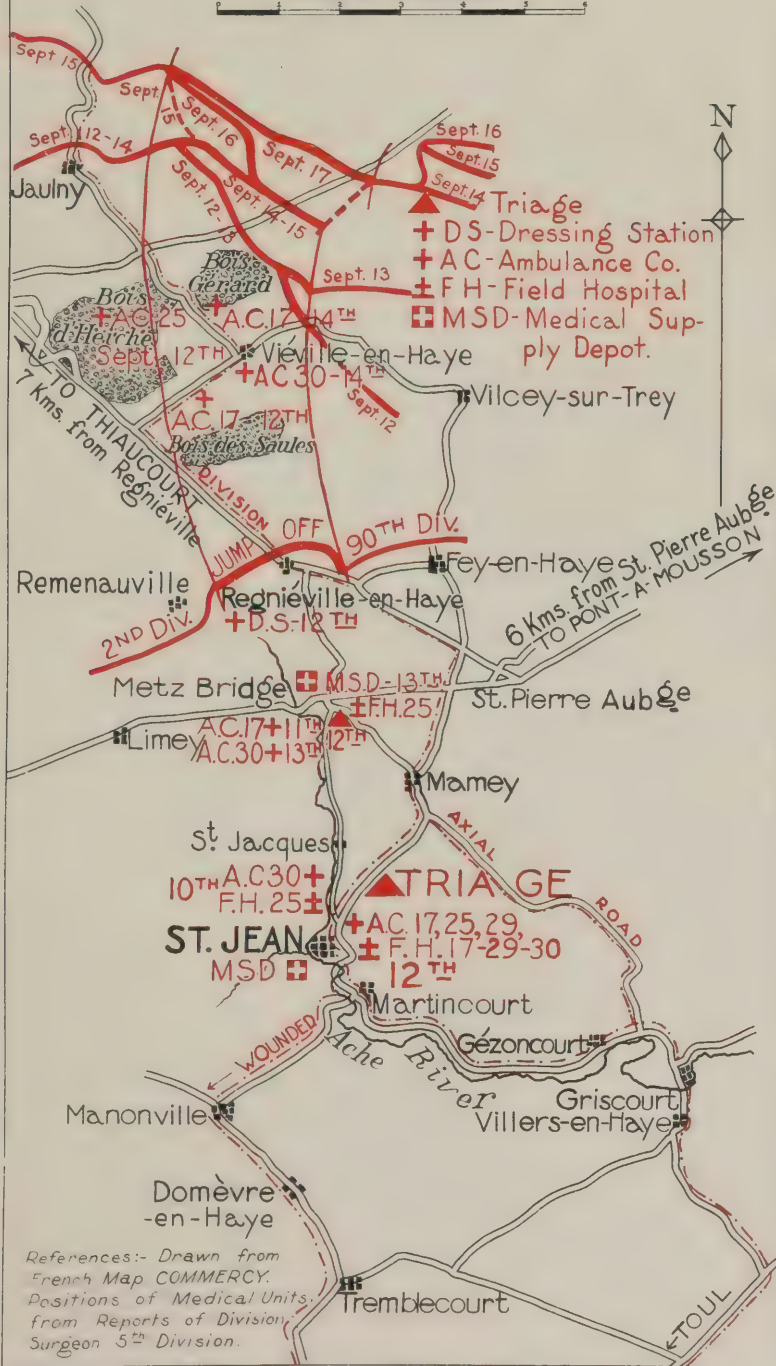
- (1) Severe hemorrhage.
- (2) Abdominal wounds, not in shock.
- (3) Severely gassed.
- (4) Wounds of thorax.
- (5) Fractures.

(j) Slight casualties who are not returned to the line will be evacuated by truck. All wounded will pass through the triage at Camp-de-Cirque, near St. Jean, one kilometer

ST. MIHIEL

5TH DIVISION

Scale In Kilometers



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

northwest of Martincourt, where they will be given such immediate treatment as may be required.

No casualty will be evacuated from a divisional area without a diagnosis tag.

(k) Vehicles used for evacuation will follow the routes and directions of the circulation map furnished herewith.

(l) In addition to troops of the 5th Division engaged in combat at the front line, medical attention will be given to troops of the French Tank Service, troops of the divisions operating on each flank, and enemy wounded. Casualties occurring among other troops will follow the same routes of evacuation as those prescribed for troops of this division.

(m) A station for slightly wounded will be established at St. Jean. Considerable delay is anticipated in opening truck roads in advance of the present front line positions, as barbed-wire and road obstructions must be removed. For this reason, it is desirable that as many of the slightly wounded as are able to walk return to the rear on foot. None will be allowed to pass the military police who are not marked with a diagnosis tag.

(n) Tetanus antitoxin will be administered at the triage and station for slightly wounded to all wounded who have not already received it.

(o) A reserve of medical officers and medical department personnel from ambulance company #30 will be held at the triage at Camp-de-Cirque, near St. Jean, to replace casualties in regimental medical department personnel.

Request for personnel to replace casualties will be made to the commander of the sanitary train at the triage.

(p) The commander of the sanitary train will render reports to the division surgeon at Martincourt, viz:

- (1) The approximate number of casualties reported.
- (2) The report of casualties in Medical Department personnel.
- (3) The number of patients evacuated to the field and evacuation hospitals.

(q) The surgeons of artillery organizations operating in the 5th Division area will report to the division surgeon of the 5th Division at Martincourt—

- (1) The name and location of the organization with which they are on duty.
- (2) Its approximate strength.
- (3) The medical department personnel, officers and enlisted men attached.
- (4) Request for necessary transportation and material.

The initial report on these subjects will be rendered as soon as possible after receipt of this order and additional reports regarding casualties to be evacuated and service required will be made as occasion demands.

(r) At the triage at Camp-de-Cirque, near St. Jean, will be stationed Field Hospital #25 and Ambulance Companies #17, 25 and 30, with such part of the additional ambulance transportation furnished by the corps surgeon as may be required for service in the advanced section. Trucks belonging to the sanitary train and trucks furnished for evacuation service by the commander of trains will be sent to St. Jean to report for service under the direction of the director of ambulance companies. The director of ambulance companies and the A. P. M. will together select the place at St. Jean for the park of waiting ambulances.

(s) Ambulances and trucks will be parked off from the usual traveled road in such a way that traffic will not be obstructed.

(t) Evacuation from St. Jean will be via Martincourt, Manonville, Domevre-en-Haye, Tremblecourt, Manoncourt, Arrainville, to Dieulouard—Toul road, and thence to evacuation hospitals located in or near Toul.

(u) Hospital for nontransportable wounded and gassed and for slightly sick.

(1) The hospital for nontransportable wounded and gassed and for slightly sick will be located south of Domevre-en-Haye on the western side of the Manonville—Tremblecourt road. At this place there will be located Field Hospital #17 and operating team #17 for treatment of nontransportable wounded.

(2) Field Hospital #29 for treatment of gassed.

(3) Field Hospital #30.

(4) The division medical supply depot.

(5) The field laboratory.

(6) Ambulance Company #29.

(7) Ambulances of the 1st Corps, designated for evacuation service, together with trucks allotted to this hospital by the commander of the sanitary train. The director of field hospitals will be stationed at Domevre. He will supervise the hospitalization, triage, and evacuation service for the corps and army. Artillery operating with the division, as well as evacuation from hospital to Domevre to evacuation hospitals.

These hospitals will make use of the buildings and bathing facilities which are available at that place. In addition it will be necessary to make use of hospital tentage. Tents will not be pitched until after dark on the night before the attack.

(v) Evacuation service for army and corps artillery:

An evacuation service for army and corps artillery will be established from the hospital at Domevre-en-Haye. Ambulances and trucks starting from Domevre-en-Haye will proceed via the route to Tremblecourt, thence northeast to Rogeville, thence to Grisecourt to Gezoncourt, thence west to Martincourt, from Martincourt to Manonville, thence southeast, returning to Domevre-en-Haye.

Surgeons of artillery organizations operating in the 5th Division area exclusive of 5th Artillery Brigade will establish collecting stations for wounded and gassed along this road. They will notify the director of field hospitals at Domevre-en-Haye of the number of casualties and location of these collecting stations.

(w) The director of field hospitals will keep the division surgeon informed with regard to casualties and evacuations as prescribed in paragraph 16 of this order.

(x) A collecting place for casualties and soldiers who have become separated from their organizations will be established by the military police at Avrainville. These men will be used for furnishing details for laboring parties, burial parties, and additional litter bearers. Requests for additional litter bearers may be made to the commander of military police, at Avrainville, by the commander of sanitary train at Camp-de-Cirque, at St. Jean, or by the director of field hospitals at Domevre-en-Haye.

(y) Evacuation service for 5th Artillery Brigade:

Surgeons of the 19th, 20th, and 21st Field Artillery will utilize their own ambulances for evacuation so far as possible. Should additional ambulance service be required, they will send request for same to the director of ambulance companies at Camp-de-Cirque, near St. Jean. There is a short road, one kilometer north of Martincourt, connecting St. Jean with the Martincourt—Mamey road. This road may be used for quick evacuation of patients from 5th Artillery positions.

(z) On the morning of the day before the anticipated action, all ambulances except those belonging to the 19th, 20th, and 21st Field Artillery, the ammunition train, and the motor supply train will be sent to report to the director of ambulance companies at St. Jean.

(a-1) Evacuation hospitals.

(1) At Sebastopol barracks, about four kilometers northwest of Toul; Evacuation Hospital #1, for treatment of wounded. (Capacity about 8,000).

(2) At La Marche barracks, "The Caserne," just south of Toul. Hospital for gassed.

(3) At Justice group of barracks, just south of Toul. Hospital for contagious diseases.

(4) Hospital for sick, nervous, and shell concussion. Base Hospital #45, at La Marche section, and Base Hospital #51, at Favier section of Justice group of barracks, just south of Toul.

NOTE.—Overflow of seriously wounded from Evacuation Hospital #1, at Sebastopol, go to the Evacuation Hospital #3 in the Justice group of barracks, just south of Toul.

In the service of the evacuation of wounded, effort will be made to load vehicles so that as little loading and unloading as possible will be required at the triage and at the field hospital.

Vehicles which are filled with patients destined for the same hospital may thus be enabled to pass the triage with no longer delay than that incident to examination of diagnosis tags.

Gassed and wounded patients will not be loaded in the same vehicle.

(a-2) While it is understood that ambulances carrying wounded are to be given all of the right of way possible on the roads, when they are not actually transporting wounded, they must clear the road for traffic the same as other vehicles. The parks of waiting ambulances must be on side roads off of the main route of travel.

* * * * *

At 5. a. m. on September 12, the division moved to the attack and, meeting little resistance, rapidly advanced its lines to north of Vieville-en-Haye. When relieved on the night of September 16-17, it occupied a line about southeast of Rembercourt.²²

MEDICAL DEPARTMENT ACTIVITIES

Prior to the attack the division surgeon had held repeated conferences with his medical officers, defining in detail the duties of each.²³

On September 9 the sanitary train was at Villey-St. Etienne, 20 km. (12.4 miles) in the rear, and because of troop movements and road conditions it was impossible to bring more than a small part of it forward at that time.²⁴ On September 10 Field Hospital No. 25 (triage) and Ambulance Company No. 30 (animal drawn) were advanced to St. Jean, giving opportunity for the establishment of the triage and for feeding the animals before the engagement began. The hospital here consisted of two barracks and a ward tent.²⁴

During the night of September 11-12 the remainder of the sanitary train moved from Villey-St. Etienne to Domevre, arriving next morning. One motor ambulance company was sent forward to the dressing station at Metz bridge. The other companies which were also posted there were held at the disposition of the director of the ambulance company section, then at St. Jean.²⁵

Medical department personnel with advancing troops accompanied the units to which they were assigned, rendering service as planned. In order to preclude shortage of supplies, so far as possible, regimental detachments carried pouches filled with surgical dressings.²⁶ As it was impossible for the battalion medical carts to go forward, medical officers replenished their supplies, by means of litter bearers, from the advance medical supply depot on the Metz road.²⁶

In the early part of this engagement the wounded were removed entirely by litter, but there were not enough litters at first to meet requirements. Their inadequacy was due to the fact that bearers detailed from the companies threw away their litters on the march during the night of September 11; to the inability of battalion medical carts to get forward through other traffic; and to the impossibility of the ambulances moving beyond the points where roads were cut by trenches or obstructed by wire entanglements, until the way had been made passable. Shortage of litter bearers was met by using in that capacity a large number of German prisoners.²⁷

Regimental surgeons reported every afternoon whether or not the field had been cleared in order that additional searching parties might be sent out if needed to complete this service before nightfall. If necessary, these parties continued their work through the night until the field was reported by them to have been cleared.²⁸

Roads were fairly good to within 4.8 km. (3 miles) of Regnieville; from that point they had been practically obliterated. North of this belt were the roads which the Germans had used, and these were found to be fairly good, except that all roads were deep with mud.²⁵ Advance information concerning enemy hospital sites proved of value by facilitating the discovery and use of their supplies, especially by regimental detachments. Information obtained from road maps taken from captured German officers showed what roads the enemy had improved, and this knowledge facilitated the effective disposition of ambulances.²⁴

THE SANITARY TRAIN

The projected disposition of Medical Department formations is given in the order above quoted. On the evening of September 11 Ambulance Company No. 17 established a dressing station on the Metz road, 200 meters (216 yards) west of the bridge over the Ache, while the other companies were still moving from Villey-St. Etienne to Domevre-en-Haye. By 10 o'clock on September 12 the troops had advanced 4 km. (2.4 miles), and orders were given that Medical Department organizations move forward. Those at Domevre-en-Haye were advanced to St. Jean, and ambulance company dressing stations were established at Regnieville-en-Haye, Bois-des-Saules, Vieville-en-Haye, and later in the former German dressing station at Bois de Gerard.²⁹

Ambulance Company No. 17 organized its station as follows: One officer was in general charge and in immediate control of the degassing section, which was operated by one sergeant and two privates; two men were detailed to administer antitoxin; one officer, one sergeant, and six men applied dressings, and four of the personnel were cooks.³⁰ Of the rest of the company, 12 were assigned as ambulance drivers, 12 as ambulance orderlies, 2 as mechanics, 2 noncommissioned officers (alternating) in charge of evacuation, 2 privates as truck drivers, 2 as orderlies, and the remainder as litter bearers. In the last days of the offensive the kitchen staff was composed of 3 regular cooks and 10 assistants, who ministered not only to the company and its patients but also to a large number of line troops, especially runners, exhausted men, and men who had lost their way.³⁰ Advanced dressing stations established by this company were usually in line with the majority of the battalion and regimental aid stations, but occupied as central a position as the terrain permitted. It was appreciated early that a dressing station would not function unless placed on a natural evacuation route, for litter bearers would turn to some other station more conveniently located. Usually the litter-bearer squads brought in the wounded to dressing stations direct from the front lines, but sometimes from aid stations only.³⁰ Whenever possible, ambulances cleared the aid stations, and if the route of evacuation was long, as in the later stage of this operation, after stopping at the dressing station continued on to the triage.

In Ambulance Company No. 17, as in other companies, ambulances were sent on demand to any aid station accessible to them.³⁰

Ambulance Company No. 25 was at first kept in reserve near Camp-de-Cirque, later "leapfrogging" Ambulance Company No. 17, and established a dressing station in the woods near Vieville, close to a regimental dressing station. Within 2.5 km. (1.5 miles) of this site were all the aid stations of Infantry, Artillery, and machine gun battalions, and this dressing station was located at a point which all incoming and outgoing transportation had to pass. Here a medical supply "dump" was maintained and issues were made largely on requests brought in by ambulance drivers or on information they conveyed, though runners also were employed by regimental personnel to carry requests for supplies.³¹

Ambulance Company No. 30 was the animal-drawn unit of the ambulance section. It was impossible to get any vehicles past enemy trenches until these had been filled in, but by noon of September 12 animal-drawn ambulances could be advanced to the immediate rear of the front. As road improvement progressed these ambulances were replaced by motor vehicles; and of the 1,500 sick and wounded transported, only 60 were removed by animal-drawn vehicles. At this time, on account of the few animals and their poor condition, it was possible to operate only 7 of the 12 vehicles available. During the operation the company was stationed at St. Jean, Metz bridge, and Vieville.³²

During this operation Ambulance Company No. 29 was held in reserve at the triage, its personnel loading and unloading ambulances and serving as military police, while its ambulances operated with those of other companies.³³

The following units were supplied the 5th Division by the First Corps:

United States Army Ambulance Service Section No. 598.—Not being needed by the corps in the rear, it was sent to the front where, on September 12 and 13, it evacuated wounded from the 2d, 5th, and 90th Divisions; then, being no longer needed, it was relieved at noon of the 13th.

United States Army Ambulance Service Section No. 570.—Rendered service on September 12, after which it returned to its station at Liverdun.

United States Army Ambulance Service Section No. 603.—Rendered service during the entire offensive, returning to its station at Liverdun on September 16.

FIELD HOSPITALS

During the night of September 11–12, Field Hospitals Nos. 17, 29, and 30, Surgical Operating Team No. 17, and the division supply unit were moved to Domevre-en-Haye.²³ Field Hospital No. 25 was located at St. Jean to function as a triage. There was also a station for slightly wounded at St. Jean and a reserve of medical officers from Ambulance Company No. 30. On the morning of the 12th, the other field hospitals reached Domevre-en-Haye, where No. 17 received the nontransportable cases, No. 29 the gassed cases, and No. 30 the slightly sick.

The hospital for the nontransportable wounded had one operating team attached. Here also were the medical supply unit, the division laboratory,

and additional United States Army Ambulance Service sections from the army and corps, as well as the trucks belonging to the division sanitary train.

At 10 o'clock on the morning of September 12 the triage was advanced to Metz bridge and the other field hospitals were brought up to St. Jean, retaining their sites there through the remainder of the operations.²⁹ The sanitary train served in the field two days after the line troops had been withdrawn, in order to maintain hospitalization for incoming troops until new medical organizations were established.³⁴

Among other items in the medical history of the 5th Division, the following should be mentioned here:

In the early part of the engagement wounded were transported entirely by litter.²⁷

Gas casualties received were comparatively rare, for the area was too large to be drenched with gases, the weather too cool for their rapid spread, and our troops were too seasoned to suffer from gas fright.³⁵

Dental surgeons and their assistants on duty with the various organizations assisted throughout the operation in rendering first aid and helping in the evacuation of the wounded. Several of these officers accompanied advancing troops and served at battalion aid stations.³⁶

As only 2 of the 12 medical carts reached their battalions at the front on the 13th of September, it was at first necessary that all regimental supplies be carried forward by the medical personnel.²⁹ This had been anticipated and was met as far as possible by having the division medical supply maintain "dumps" at the dressing stations. These in turn were replenished from the dump at Metz bridge.³⁴

A feature of the work of the Medical Department was the establishment of kitchens at all dressing stations and field hospitals, where hot meals were served to any soldiers needing food. These meals were prepared from Army rations, of which two truckloads were used for the purpose, and were supplemented by delicacies furnished by the Young Men's Christian Association.³⁴ Food was supplied day and night during the period of greatest activity, when between 3,000 and 4,000 men were served.³⁴ Soldiers reporting without authority at the dressing station were instructed to get a good meal before seeking medical attention. As a result most of them, after being fed, returned on their own initiative to the front line for duty.³⁴ The food service produced a considerable increase in efficiency in the fighting force and materially reduced the sick rate.

On the afternoon of each day the fact that the field had been cleared was verified by searching parties. Thus, on the morning of September 17, after a night engagement, the field was reported clear at 8.30 a. m., though the sanitary units remained at Metz bridge and assisted units of the 78th Division in the evacuation of their wounded.³⁴

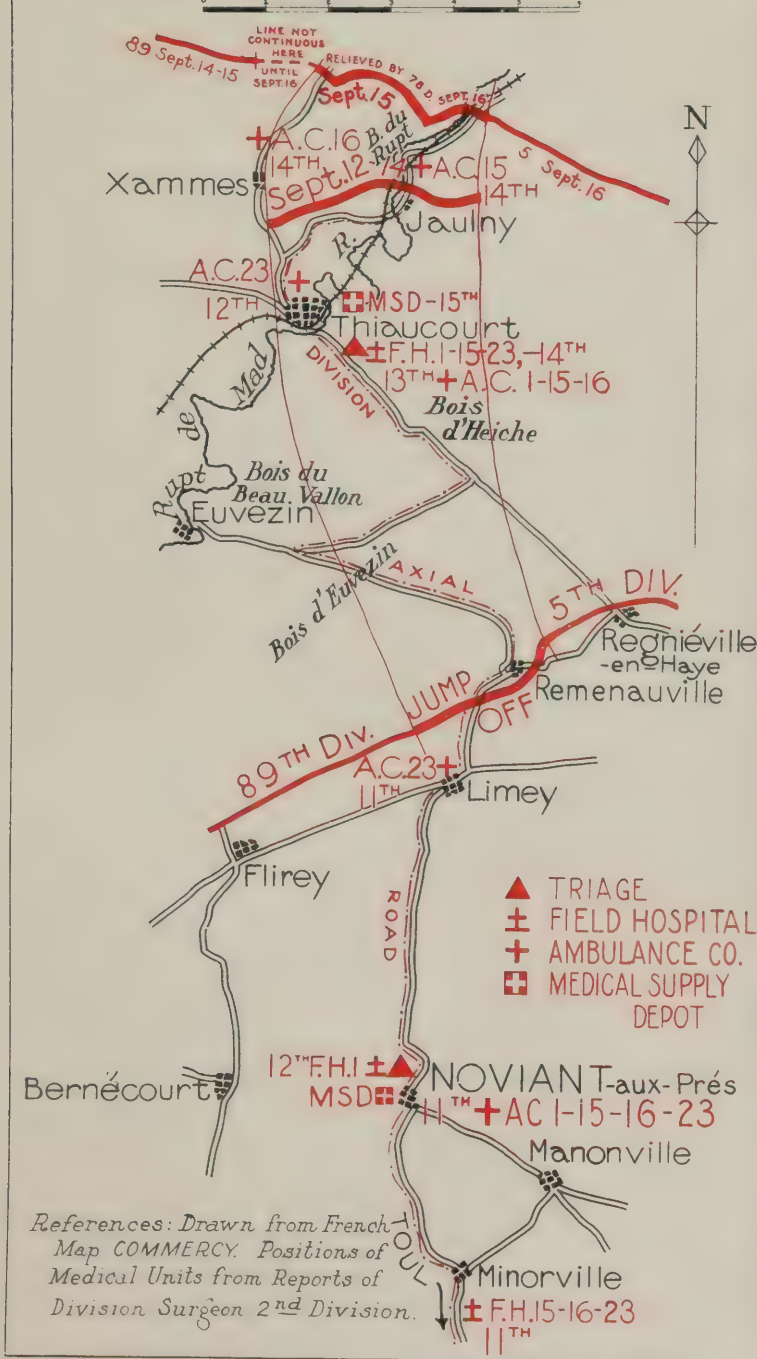
THE 2D DIVISION

On September 11, the front line of the 2d Division extended from Remenuville to Limey (both inclusive).³⁷

ST. MIHIEL

2ND DIVISION

Scale In Kilometers



The Infantry of the division attacked promptly at 5 a. m., September 12, preceded by an artillery barrage. Although the ground was wet and heavy underfoot, the troops pushed forward rapidly, encountering very little opposition, except, occasionally, an enemy machine-gun nest made a stubborn resistance. The first phase objective was reached at 9 a. m.³⁷

The Infantry advanced from the first phase line at 11 a. m., September 12, the hour set in the division attack order. By noon it was in possession of Thiaucourt, only slight enemy resistance having been encountered. By 2.50 p. m. the army objective, the line Jaulny—Xammes, was reached.³⁷

During the succeeding three days the division consolidated its gains; on the night of September 15–16 it was relieved by the 78th Division and withdrew on September 20–21 to the Toul area.³⁸

MEDICAL DEPARTMENT ACTIVITIES

Battalion aid stations were established in the trenches on the night of September 11, and as the attack progressed others were opened close to the lines. Stations left behind by the advancing Medical Department personnel were taken over by the corresponding formations of support and reserve troops. Through this system, battalion surgeons kept near their men and the troops they served, and litter bearers from line companies had to transport patients but short distances.³⁹

Mindful of the delays in the removal of wounded which had occurred during the offensive against Soissons, when litter-bearer companies were retarded in reaching the front on account of road congestion and because of imperfect liaison, certain innovations were now introduced into the evacuation service. An active lieutenant (Medical Department) was appointed litter-bearer officer for the division, and two others, similarly designated, were selected from each ambulance company to work with their litter-bearer sections under his direction.⁴⁰ These officers, in their respective jurisdictions, knew the exact location of battalion aid stations at the jump-off and had located the points where such stations would probably be found later and where dressing stations should be established in case the attack progressed as expected. They acquainted themselves with paths from battalion aid stations to the ambulance posts and with the roads which vehicles would use. Their squads were at the battalion posts before the jump-off in order that they might begin to function immediately. These litter-bearer officers were required to cover many miles afoot before and during an advance in order that they might locate stations to the best advantage through personal examination of roads and terrain, but the results proved well worth the effort. This system of evacuation for the regiments and in their immediate rear was very successful and a noteworthy improvement on previous practice.⁴¹

AMBULANCE COMPANIES

Headquarters of the ambulance company section was located at Noviant-aux-Press.⁴¹ At daybreak of September 12 a dressing station was established by Ambulance Company No. 23 at Limey, about 273 meters (300 yards) back

of the front line, while the other companies in reserve evacuated to the triage at Noviant-aux-Pres.⁴²

Roads through No Man's Land were in a frightful condition, but a dressing station and three ambulances of Ambulance Company No. 23 followed the attacking lines.⁴³ That road conditions were so bad was not surprising, as the Germans depended largely upon narrow-gauge railways, using the roads but little and repairing them still less. In addition, many "tank pits" had been dug in the roads.⁴³ Nevertheless, by 4.30 o'clock Ambulance Company No. 23 had established a dressing station at Thiaucourt.⁴³

A little later the same evening seven ambulances of Ambulance Company No. 15 arrived with the company's dressing station equipment. The mule-drawn vehicles of Ambulance Company No. 16 arrived the same day and evacuations began.⁴³ Animal-drawn ambulances proved of great value when roads were at their worst, but as each ambulance had only two mules and roads were very rough and heavy, a single trip nearly exhausted the animals for a day.

On September 13 Ambulance Company No. 15 took over the station of Ambulance Company No. 23, at Thiaucourt, and the following day established a station at Jaulny in a château which the Germans had used as a hospital.⁴³ This place was shelled several times during the night, and wounded were removed only after several interruptions and with considerable danger. On the same date, Ambulance Company No. 16 established a station at Xammes, about 1.5 km. (0.93 mile) behind the trenches.⁴² During this period the roads were being repaired with material taken from the ruined villages of Limey and Remenauville, and evacuations became progressively less difficult.⁴³ After September 14 the dressing station of Ambulance Company No. 23, at Limey, became the rear limit of evacuation by the Fifth divisional train; from that point patients were carried to the rear by the ambulances of the 78th Division.⁴⁴

FIELD HOSPITALS

At the commencement of this offensive Field Hospital No. 1, the triage, was at Noviant-aux-Pres, while Field Hospitals No. 15 and No. 23, for non-transportable surgical cases, and Field Hospital No. 16, for gassed and sick, were on the Minorville—Royaumeix road, 2 km. (1.2 miles) from Minorville.⁴¹ At noon of the 13th, Field Hospital No. 1 was closed and was moved to Thiaucourt during the night, Field Hospitals No. 15 and No. 23 joining it the next day, and the medical supply unit on the 15th. Field Hospital No. 16 remained near Minorville.⁴³

By this time the several field hospitals of the division had been specialized. No. 1, the permanent triage, carried portable baths, both tub and shower, with gas soap, soda, extra pajamas and underwear, and a large supply of splints, litters, blankets, and dressings.⁴⁵ Field Hospitals No. 15 and No. 23, combined into one, for the nontransportable wounded, were augmented by a mobile surgical unit which afforded X-ray facilities and electric lights.⁴⁵ This consoli-

dated unit had a capacity of 250 beds. Field Hospital No. 16 was equipped to care for gassed and ordinary sick, carrying no surgical equipment.⁴⁵

While stationed at Thiaucourt frequent shelling obliged Field Hospitals No. 15 and No. 23 to seek shelter underground. They utilized vaulted cellars, which made good and safe operating rooms.⁴⁴ Because of their proximity to the lines and the efficiency of the new method of evacuation, the wounded were often in this combined hospital within half an hour after they had been wounded.⁴⁴ This prompt but unhurried removal doubtless saved many lives, especially among those suffering from abdominal wounds. On account of its more central location this consolidated unit here relieved Field Hospital No. 1 of triage duty.⁴⁴ That organization, with the litter bearers of Ambulance Company No. 3, which had been on duty here, left for Ansauville on the night of the 16th. The next day Field Hospitals No. 15 and No. 23, and the dressing stations, turned over their sites to units of the 78th Division and withdrew to Grand Mesnil, where the train was reunited.⁴⁴

The château at Thiaucourt, with numerous barracks of the Adrian type, had been a German medical and surgical hospital. Its equipment included a portable X-ray outfit, blankets, dressings, many paper bandages and sponges, and two completely equipped medical wagons. These wagons were unpacked and their contents stored in the château. On the 20th four officers went with a truck to salvage X-ray outfit and supplies, and, in spite of enemy bombardment, succeeded in removing them. Two German ambulances, with litter trailers, were captured in this sector. Only the rear wheels had rubber tires, the front wheels being provided with spiral springs. Trailers had but two wheels each, with pneumatic tires. The capacity of these ambulances was three litter cases placed lengthwise, and four sitting patients, placed vis-à-vis, amidships. All these vehicles had canvas tops and side curtains.⁴⁶

THE 78TH DIVISION

During the St. Mihiel operation the division was in the reserve of the First Army Corps and was in support of the 2d and 5th Divisions, with headquarters at Rosieres-en-Haye. It remained in reserve until the nights of September 15-16 and 16-17, when it relieved the 2d and 5th Divisions, respectively (less Artillery). The organization of this sector, just taken from the enemy, and the frequent raids carried out to divert the attention of the enemy from the approaching Meuse-Argonne operation, made its occupancy a particularly active one.⁴⁷

MEDICAL DEPARTMENT ACTIVITIES

On September 10 and 11 almost the entire sanitary train concentrated in the woods in the rear of the 2d Division.

On September 12, the 78th Division furnished 12 ambulances, which evacuated to Toul patients of the 2d, 5th, and 89th Divisions. On the 13th and succeeding days, these ambulances were used to transfer patients to Toul from the

dressing station of the 2d Division at Limey. The sanitary train was now stationed in Bois de Mort Mare until September 16.⁴⁸

Field hospitals were located at St. Jacques, where No. 309 received surgical cases, No. 310 gassed, No. 312 general, medical, venereal, and psychoneurotic, and No. 311 was held in reserve, part of its personnel assisting other units.⁴⁹

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- (4) *Ibid.*, 8.
- (5) Memorandum from the corps surgeon, First Army Corps, August 26, 1918. On file with report on Medical Department activities of the 90th Division, A. E. F., Historical Division, S. G. O.
- (6) Report of Medical Department activities, First Army Corps, in the St. Mihiel operation, by Col. J. W. Grissinger, M. C., corps surgeon, undated, 3. On file, Historical Division, S. G. O.
- (7) *Ibid.*, 14.
- (8) *Ibid.*, 17.
- (9) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College, 1700 (82d Division).
- (10) Report of Medical Department activities, 82d Division, A. E. F., prepared under the direction of the division surgeon, undated, 9. On file, Historical Division, S. G. O.
- (11) *Ibid.*, 31.
- (12) *Ibid.*, 24.
- (13) Outlines of Histories of Divisions, U. S. Army, 1917-1919. Prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College, 1700, (90th Division).
- (14) Operations report, 90th Division, St. Mihiel operation.
- (15) Report of Medical Department activities, 90th Division, A. E. F., prepared under the direction of the division surgeon, undated, Part II; 6. On file, Historical Division, S. G. O.
- (16) *Ibid.*, Part I, 11.
- (17) *Ibid.*, Part I, 14.
- (18) *Ibid.*, Part I, 15.
- (19) *Ibid.*, Part I, 13.
- (20) *Ibid.*, Part II, 7.
- (21) *Ibid.*, Part I, 12.
- (22) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College.
- (23) Report of Medical Department activities, 5th Division, A. E. F., prepared under the direction of the division surgeon, undated, Part V, 22. On file, Historical Division, S. G. O.
- (24) *Ibid.*, Part I, 24.
- (25) *Ibid.*, Part I, 30.
- (26) *Ibid.*, Part I, 32.
- (27) *Ibid.*, Part I, 37.
- (28) *Ibid.*, Part I, 39.
- (29) *Ibid.*, Part I, 31.

- (30) Ibid., Part IV, 2.
- (31) Ibid., Part IV, 12.
- (32) Ibid., Part IV, 19.
- (33) Ibid., Part IV, 16.
- (34) Ibid., Part I, 33.
- (35) Ibid., Part I, 38.
- (36) Ibid., Part I, 34.
- (37) Journal of Operations May 1 to November 30, 1918 (2d Division).
- (38) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College, 1700, (2d Division).
- (39) Operations report, Medical Department, 2d Division, A. E. F., from the division surgeon to the commanding general, 2d Division, September 17, 1918. On file, Historical Division, S. G. O.
- (40) Report of Medical Department activities, 2d Division, A. E. F., prepared under the direction of the division surgeon (undated), Part I, 34. On file, Historical Division, S. G. O.
- (41) Ibid., Part I, 35.
- (42) Ibid., Part II, 4.
- (43) Ibid., Part I, 36.
- (44) Ibid., Part I, 37.
- (45) Ibid., Part II, 14.
- (46) Ibid., Part I, 39.
- (47) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College, 1700, (78th Division).
- (48) Report of Medical Department activities, 78th Division, A. E. F., prepared under the direction of the division surgeon, undated, 25. On file, Historical Division, S. G. O.
- (49) Ibid., 2.

CHAPTER XVI

THE FOURTH CORPS (89TH, 42D, 1ST, AND 3D DIVISIONS)

The Fourth Corps in the St. Mihiel operation, it will be recalled, comprised the 89th, 42d, and 1st Divisions in line, with the 3d Division in reserve. On September 6 the 89th Division held the entire Fourth Corps front line, with the 1st, 3d, and 42d Divisions in the back areas. The 1st Division was moved into the line, as the left division of the corps, on the nights, September 6-7 and 7-8, and the 42d Division on the night, September 10-11. The advance post of command of the corps was established in Menil-la-Tour, September 10. The 3d Division moved into the Forêt de la Reine on the night of September 11-12, as corps reserve, and on September 12 moved up behind Beaumont Ridge, and continued to act as corps reserve.¹

The corps attacked at 5 a. m., September 12, after an artillery preparation of four hours, which was followed by a rolling barrage which moved at the rate of 100 meters (109 yards) in four minutes up to include the hostile intermediate position (trench Bailly, trench Moulin-Maizerais, trench Euvezin). The corps attacked at II hour in spite of very unfavorable weather conditions. The first objective was reached at a mean time of 11 a. m. This pierced the enemy's outpost position, broke through his position of resistance, and seized the heights of the Madine brook and heights southeast of Bouillonville. Orders were at once given to proceed to the first day's objective as soon as the divisions were ready for the new phase of the operation. The first day's objective, second phase, was the position: Eastern edge of Etang de Lambepinot—northern tip of woods north of Etang de Lambepinot (point 49.73)—Nonsard (inclusive)—Lamarche (exclusive)—southern tip of Bois de Thiaucourt—crossroads 700 meters southeast of Beney (point 08.155)—point 700 meters (763 yards) south of Xammes (point 255.265, point of junction, First Corps).¹

During the afternoon of September 12 the enemy withdrew some of his troops through Vigneulles and points north, but his withdrawal was hampered to a great extent by the rapid advance of the Fourth Corps.

Field Order No. 21, Headquarters, Fourth Army Corps, issued at 4.30 p. m., September 12, directed that the advance to the first phase objective, second day, be made. The front line divisions also were ordered to assure the defense of the first day's objective. The 1st and 89th Divisions continued to advance during the night of September 12-13. The 42d Division continued the advance at 6 a. m., September 13. To effect a junction with the Fifth Army Corps, the 1st Division was given a reserve of two battalions of the 42d Division and one brigade of the 3d Division. At 3.15 on the morning of September 13 the 2d Brigade, 1st Division, advanced, and between 8 and 10 a. m., September 13, occupied all routes leading north and east from Hat-

tonville and Vigneulles. Complete contact with the 26th Division, Fifth Corps, in the vicinity of Vigneulles, was obtained at about 9 a. m., September 13, by the provisional squadron, 2d Cavalry, and detachments, 2d Brigade, 1st Division. This contact completed the reduction of the St. Mihiel salient.¹

The army objective, which was on the general line, Vieville (inclusive)—Hattonville (inclusive)—northern edge of Chaufour B.—Chateau St. Benoit—center of Bois de Dampvitoux—Xammes (inclusive), was reached at a mean time of 11 a. m. September 13.¹

On September 15 the corps sector was held with two divisions in line, the 89th on the right and the 42d on the left. The 1st Division, in support, assembled in the area Bois de la Belle Oziere—Nonsard—Etang de Pannes; the 3d Division continued in reserve behind the Beaumont Ridge.¹

Annex No. 4—F. O. No. 14. (Sept. 6, 1918)

IV ARMY CORPS

PLAN OF COMMUNICATIONS, SUPPLY AND EVACUATION

Maps: Mort Mare—1:20000

Commercy—1:80000

Chambley—1:20000

5-6

PART I.—*Communications*

1. Railroad and Light Railways:

(a) Standard gauge. Supplying the IV Army Corps:

Main line: Paris—Toul—Nancy. (Serves the railhead at Sorey and Toul.)

Branch lines: (a) The Woevre line, an elbow of which branches at Pagny-sur-Meuse and touches at Trondes—Andilly and Villey-St. Etienne, with extensions as follows:

1. To the Foret-de-la-Reine. (Serves Army and Corps troops in Foret-de-la-Reine.)
2. To the vicinity of Avrainville.
3. To the Bois-de-Minorville.

* * * * * *

(e) General instructions:

1. Divisions, the general commanding the corps artillery, and units of corps troops will make application daily before 4.00 p. m. to G-1, these headquarters, for transport desired by narrow gauge for the following day. The request will state kind of material to be transported, bulk in cubic yards, and point to which material is to be transported.

The following is the order of priority:

- (a) Ammunition.
- (b) Engineer material.
- (c) Rations.
- (d) Other supplies.

* * * * * *

2. Roads.

(a) Corps axial road. Toul—Menil-la-Tour—Bernecourt—Flirey—Essey—Pannes—Beney—St. Benoit.

(b) Division axial roads.

1st Division

South to north.—Pagny-sur-Meuse—Mon Forre—Charriere La-Belle—Raulecourt—Broussey—Rambucourt (by arrangement with commanding general 2d French Colonial Corps)—Beaumont—Seicheprey—St. Baussant—Essey—(western outskirts)—Pannes—Nonsard—Vigneulles.

North to south.—Axial road to Broussey—Gironville—Jouy (by arrangement with commanding general 2d French Colonial Corps)—Cornieville Mon Forre—Boucq.

42d Division

South to north.—West of Toul—Lagney—Sanzey—Tuilerie—road south of Etang—Rome—Grange-en-Woevre Etang—road east of Etang Neuf-de-Mandres—Mandres—St. Dizier—Flirey—Essey (eastern outskirts)—Pannes (road to be constructed from Essey to Pannes parallel to main road)—Beney—St. Benoit.

North to south.—Axial road to road junction at Grange-en-Woevre Etang—road south thru Bois-de-Boucq—thence east and south to road junction near Leonval—south thru Bois-le-Foncel—thence to road thru southern edge of Bois-de-Lagney—Croix Juree—Lagney.

89th Division

South to north.—Corps axial road from east of Toul to Flirey—Limey—unimproved road along corps's east boundary to center of Bois-D'Euvezin—Euvezin—point 246—Bouillonville—point 283—Xammes.

North to south.—Same route.

3d Division

Corps road to area. When ordered forward will use axial road of the division in whose sector they move.

Axial roads will be marked by signboards bearing numerical designation of division.

The road Royaumeix—Minorville—Noviant—Limey is given to 1st Corps for axial road of 2d Division. This road may be used for evacuation of sick and wounded.

(c) Lateral roads. Euville—Vertuzey—Troussey—Pagny-sur-Meuse—Lay St. Remy—Foug—Toul; Cornieville—Boucq—Menil-le-Tour—Manoncourt; Bouconville—Beaumont—Limey.

Empty horse-drawn vehicles and horses will use the roads and tracks other than axial roads as far as possible.

(d) Army and corps. Will use the axial roads of the division nearest their line for supplies and evacuation.

(e) Road circulation:

1. The road system of the corps is divided into two zones:

(a) The corps zone covers all territory within the corps sector between the roads: Euville—Vertuzey—Troussey—Pagny-sur-Meuse—Lay St. Remy—Foug—Toul (inclusive). Cornieville—Boucq—Sanzey—Menil-le-Tour—Andilly (exclusive).

(b) Division zones include all territory within their respective sectors, north of Cornieville—Boucq—Sanzey—Menil-le-Tour—Andilly (inclusive).

(c) Regulations covering traffic within divisional zones will be prepared by divisions but must conform to G. H. Q. traffic regulations.

(d) Corps axial road is free for all vehicles both ways.

(e) The circulation maps for corps zone showing the corps and division axial roads will be furnished each division.

3. Traffic control:

(a) By the corps within the corps zone. By the divisions within their respective zones.

Railheads:

Manoncourt, by 89th Division.

Sorey, by 1st Division.

Toul, by 3d Division.

(b) Organization of traffic control.

In the A. C. and in each division, the P. M. and his assistants will supervise the whole service.

The control will be effected by stationary posts of dismounted police and patrols of mounted police.

The stationary posts will be placed on the principal crossroads and at the entrance of dumps. They must see that the rules concerning the direction of traffic are observed and prevent any blocks. They must prohibit access to roads which are temporarily shelled and direct the traffic to other routes previously determined. They must enforce a strict observance of the prescribed measures of safety when vehicles are obliged to pass through a portion of the road under bombardment.

In order to carry out the above, the head of each post will be given written orders prepared by the P. M. for the corps zone and by the A. P. M's for the division zones. A copy of these orders will be sent to G-I IV A. C.

(c) Traffic regulations for D day.

Traffic on the axial roads of the 1st, 42d, and 89th Divisions:

1. Those belonging to the division on its own road.
2. Those of the Signal Corps.
3. The ambulances.
4. The staff cars.

Until H plus 8h (in order to hasten the repair of the axial roads) no traffic will be allowed on these roads from the line Bouconville—Beaumont—Limey (inclusive), save for vehicles for repair of roads, those of Signal Corps, ambulances, messengers, Artillery, and those carrying ammunition.

Upon capture of first day's objective the responsibility for traffic control is as follows:

1. IV Corps will be responsible from present dividing line forward to a boundary which will be fixed from time to time in orders. This boundary will be Beaumont—Limey road, inclusive.

2. The 1st, 42d, and 89th Divisions will be responsible in their own area beyond the above boundary as far as the battle line.

(d) Stragglers.

Straggler post lines.—Each division in the front line will establish the following lines: 1st line, approximately 100 yards in rear of the line of regimental aid stations.

2d line, approximately 3 kilometers in rear of the first line.

Corps will establish a third line across corps area approximately 6 kilometers from the front.

(e) Instructions.

1. The first two lines will cover all first-aid stations, roads, paths, and trails leading from the front, and no enlisted man will be permitted to pass to the rear without written authority, except the walking wounded. In case of walking wounded they will be required to bring with them their full equipment.

2. All posts will be instructed in the location of first aid stations, near-by headquarters, location of their divisional collections station, destination of roads, near-by water sources, and traffic regulations.

3. Each division will establish a collecting station for stragglers with an officer in charge whose duty is to return stragglers to their organizations. This station should be provided with water and some reserve rations.

4. The corps provost marshal will have charge of the 3d stragglers' line and of the 1st and 2d lines for purposes of coordination. He will also effect liaison with the corps on our right and left.

5. As the above progresses the straggler lines will be moved forward. In each case well-defined roads should be selected for the 3d line.

6. The posts and patrols of mounted police will arrest any man going to the rear without a pass signed by the C. O. of his unit or a medical officer, except as provided in Paragraph I. These passes shall be valid for one day only. They will indicate the object of the mission, its duration, and the itinerary to be followed by the bearer. Written orders to be delivered, the receipted envelope signed by the addressee, will be valid as a pass for the bearer. They will stop the sick and wounded and direct them to the proper field hospitals.

7. *Civilians*.—The circulation of civilians will be strictly observed. It will be forbidden from 7 p. m. to 5 a. m. All the stationary posts, and patrols of mounted police, will be given orders to that effect.

* * * * * *

PART V.—*Evacuation of sick and wounded*

MAPS: COMMERCY }
 NANCY }
 WOEVRE } 1:80000.

1. Organization of sanitary units, etc.

Battalion aid stations, litter bearers, and regimental aid stations will be established by the various regimental surgeons, under direction of their respective division surgeons. In no case should a battalion or regimental aid station be located at the same place as the regimental P. C.

2. Sorting and advanced dressing stations (triage) will be established as follows:

1st Division, Raulecourt.

42d Division, Ansauville.

89th Division, between Minorville and Royaumeix off road to northeast of the road about 1,400 meters S. W. of Minorville.

3d Division.

These stations must be located off the main routes of traffic, in order to avoid congestion and blocking.

All cases go to the division triage, where they are given such preliminary treatment as is found to be needed and then will be distributed and evacuated, as per the table below and over the routes specified in that table.

The corps surgeon and division surgeon will notify their respective corps and division provost marshals of the location of their sanitary units as soon as it is possible to do so.

The divisional medical gas officer, psychiatrist, and orthopedist will take station at the triage. The medical gas officer will examine all gas or suspected gas cases and advise such preliminary treatment as is required, recommending the return to the front of such cases as he deems fit for duty, and to the rear such cases as he deems require hospitalization. The psychiatrist will examine all cases of shock or simulated shock or other nervous conditions, recommending their disposition as in the case of the gas cases. The orthopedist will examine fractures and joint injuries and will see that no cases are sent to the rear improperly splinted.

3. The sanitary units of the 3d Division will be held subject to the call of the corps surgeon for use where needed. If this division should reinforce the line, it will then use the sanitary organizations and system of evacuation and the triage laid down for the division it reinforces or relieves.

4. Divisional ambulance companies will be used as far forward of their triage as the military situation will permit and to evacuate their triage to both field and evacuation hospitals, but especially to the former, and in the case of the latter only to assist the evacuation ambulance companies. If additional transportation is needed, call will be made on the corps surgeon, who will have at his disposition the ambulance companies of the division in reserve and those of the corps, if the latter are then provided, or, if the conditions warrant it, the corps surgeon may use ambulance companies from any one division to help out another division under stress.

5. Chief surgeon of the divisions will be held responsible that all roads and hospitals, aid stations, etc., are plainly marked so as to facilitate ambulance traffic.

6. Wherever the narrow-gauge lines run in contact with any of the evacuation points, the corps surgeon will use returning empties to assist in evacuation. Effort will be made to locate the triage with this point in view, and, as far as practicable, in making forward locations of triages, this point must be considered by division surgeons and by the chief surgeon of the corps.

7. Cases will be evacuated as follows and over the routes indicated:

Type of cases and where evacuated	Routes of evacuation
<p><i>A. Severely wounded.</i>—All severely wounded of corps troops on the extreme left flank and of the left flank division will be evacuated to Mobile Hospital No. 39 at Aulnois sous Vertuzey, $\frac{1}{2}$ kilometer south of Aulnois, on the Aulnois—Vertuzey road.</p>	<p><i>1st Division.</i>—Raulecourt—S. E. fork—south—Rangeval—Cornieville—Aulnois. And if and when necessary to overflow to Evacuation Hospital No. 3, in Toul (Toul Justice) via Vertuzey—Troussey—Pagny-sur-Meuse—Lay St. Remy—Foug—Ecrouves—Toul.</p>
<p>For all other troops west of the Moselle River, to Evacuation Hospital No. 1, at Sebastopol; 5 kilometers north of Toul on the Toul—Menil-le-Tour road.</p>	<p><i>42d Division.</i>—Ansauville—division axial road—Tuilerie—Boucq—Lagney—Bruley—Evacuation Hospital No. 1 (Sebastopol), crossing corps axial road just before reaching destination.</p>
<p>Evacuation Hospital No. 3, in the H. O. E. of the Justice group of barracks, just south of Toul, will receive the overflow from the above hospitals. A careful sorting must be effected at the divisional triage, so that these hospitals are not overwhelmed with slight cases or gas cases, necessitating a secondary evacuation to hospitals to which they should have been sent originally.</p>	<p><i>89th Division.</i>—Triage—Royaumeix—division axial road. Sebastopol.</p>
<p><i>B. Slightly wounded.</i>—Corps troops on the extreme left flank and the left flank division to Provisional Evacuation Hospital (F. H. No. 41) near Sorcy—Gare, $1\frac{1}{2}$ kilometers north of Sorcy on the Aulnois—Sorcy road. (The road to this hospital is a one-way road only. All other divisions of the IV Corps and the corps troops adjacent, to Evacuation Hospital No. 3 at Toul Justice.)</p>	<p>From Mobile Hospital 39, via Trondes Lay St. Remy—Foug—Ecrouves—Toul Justice. From Evacuation Hospital No. 1 to road east of Bruley—Toul Station—Toul Justice.</p>
<p>Evacuation Hospital No. 14, in the Perrin Brichambault section of the Justice group of barracks, just south of Toul, will receive the excess of slightly wounded of all divisions and corps troops, except the left division.</p>	<p><i>1st Division.</i>—Raulecourt—S. E. fork—south—Rangeval—Cornieville—Aulnois—Vertuzey—Sorcy.</p>
<p><i>C. Gassed (for evacuation).</i>—For all troops: To gas hospital at La Marche section of the Justice group of barracks, just outside of the city of Toul.</p>	<p><i>42d Division.</i>—Ansauville—Tuilerie—Boucq—Lagney—Bruley—Toul.</p>
<p>All gas cases which are not to be evacuated to be taken care of in field hospital which is equipped as a gas hospital.</p>	<p><i>89th Division.</i>—Royaumeix—Andilly—Menil-la-Tour—Toul Justice. Trondes—Lay St. Remy—Foug—Ecrouves—Toul Justice (Evacuation Hospital No. 14).</p>
	<p><i>1st Division.</i>—Raulecourt—S. E. fork—south—Rangeval—Cornieville—Troussey—Pagny-sur-Meuse—Lay St. Remy—Foug—Ecrouves—Toul Justice (gas hospital).</p>
	<p><i>42d Division.</i>—Aunsauville—Tuilerie—Boucq—Trondes—Lay St. Remy—Foug—Ecrouves—Toul Justice.</p>

Type of cases and where evacuated

Routes of evacuation

D. *Contagious, venereal and skin*.—For all troops: To the contagious hospital of the Justice group of barracks just outside of the city of Toul.

E. *Sick, nervous and shell concussion (for evacuation)*.—For all troops: Base Hospital No. 45, La Marche section of the Justice group of barracks, just outside the city of Toul, and Base Hospital No. 51, Fabvier, of the same group of barracks.

F. *Nontransportable cases*.—Will be taken care of in the field hospital designated by the division surgeon for that purpose.

G. Wounded prisoners, as far as it is possible to sort same, will be evacuated to Evacuation Hospital 1.

H. French wounded will be evacuated to Evacuation Hospital No. 14, Justice, Toul.

89th Division.—Minorville road—Royau-meix—Menil-la-Tour (corps axial road)—Toul Justice.

Same as above.

8. Corps consultants attached to the office of the chief surgeon, IV Army Corps, will receive definite verbal instructions from the chief surgeon from time to time as the situation develops.

9. Evacuation of animals.

1. The corps will establish an advance collecting point at Menil-la-Tour.

2. Divisions will establish a central collecting point, where corps will send necessary personnel to secure animals to be evacuated.

3. Divisions having animals to be evacuated will make application to G-1 of the corps

THE 89TH DIVISION

Prior to September 11, 1918, the 89th Division held the Lucey sector on a front of approximately 16 km. (9.9 miles) to the north of the Metz road from west of Bouconville to east of Limey. A small portion of the western end of the line was taken over by the French Second Colonial Corps, on the night of September 8-9. Some units on the position of resistance were relieved by the 1st Division on the nights of September 6-7 and 7-8, by units of the 2d Division on the nights of September 9-10 and 10-11, and by units of the 42d Division on the night of September 10-11. The advanced post positions were held, however, by the 89th Division on the night of September 11-12, when these were taken over west of Flirey by units of the 1st and 42d Divisions. The 2d Division was scheduled to relieve the outposts east of Limey on the night of September 11-12, but did not do so.²

The artillery preparation began at 1 a. m., September 12. H hour was 5 o'clock. On the right, the 177th Brigade of Infantry advanced in good order and on schedule time. At 11 a. m. the brigade was halted on a line designated as the objective of the first phase, the limit of the independent action of the

division, rectifying the position by a slight advance, where it remained until 4 p. m. The advance of the 178th Brigade was not so favorable, as it did not reach this line until 3 p. m.²

By dawn of September 13 the division was occupying substantially the army objective,² having featured in the capture of Bois de Mort Mare, Bouillonville, Euvezin, Beney, and Xammes.³

MEDICAL DEPARTMENT ACTIVITIES

Battalion surgeons advanced usually in the support lines, attempting to keep contact with the battalion commanding officers, and at various times collected the wounded at designated points where they were picked up by ambulances from the 353d Ambulance Company.⁴ Similarly, regimental surgeons established aid stations, but these did not function so actively as did those of the battalions.⁵ In smaller units, such as Machine Gun Battalions or field signal battalions, the Medical Department enlisted men were distributed among the several companies and the wounded were evacuated to the aid stations of the regiment to which the battalion was attached or near which it was operating.⁵ During this operation the removal of wounded to aid stations or collecting points was greatly facilitated by the fact that line companies furnished an adequate number of bearers, an expedient prohibited later in the Meuse-Argonne operation.⁶ Liaison between forward stations was maintained by runners, and between these and the dressing stations by telephone or by returning ambulances. It proved difficult at times to get word back and, when delivered, messages were sometimes distorted.⁶

AMBULANCE COMPANIES

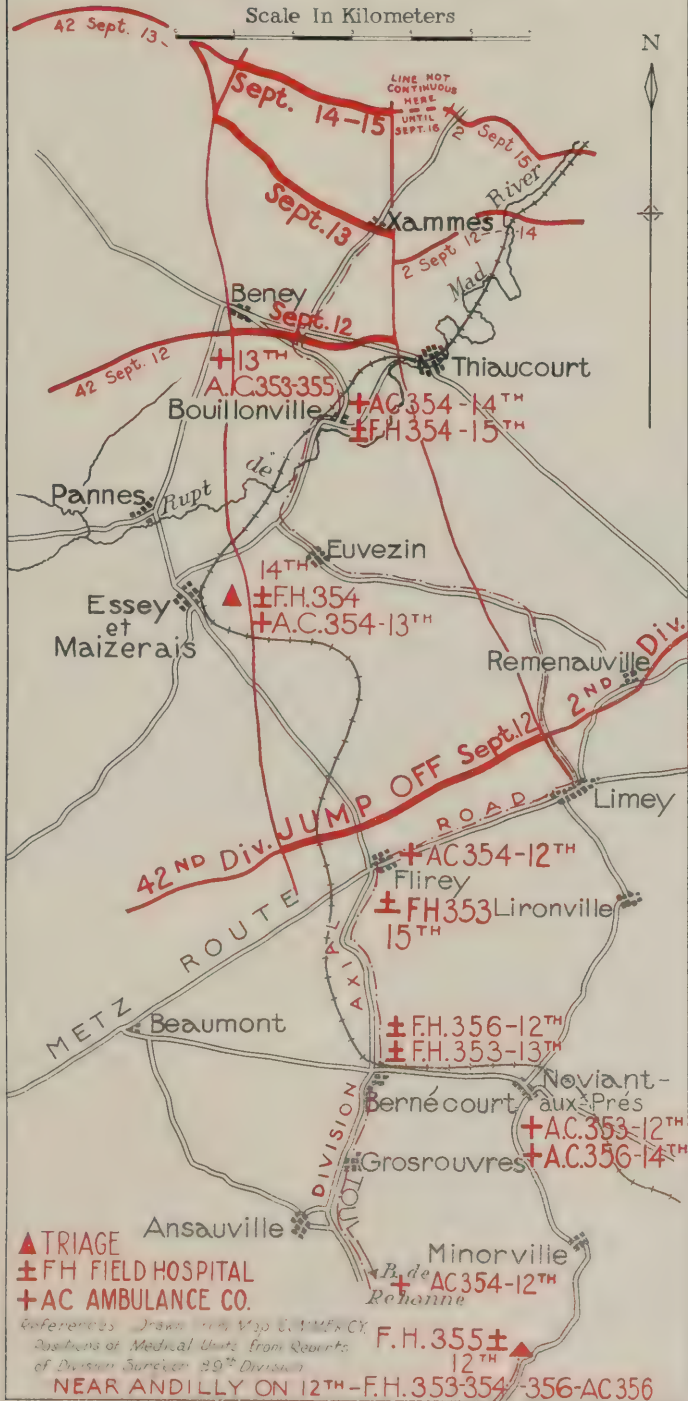
On September 13 four ambulances of Ambulance Company No. 353 got through to Bouillonville, where they overtook the regimental surgeons. The company headquarters moved to that point the same day and established a dressing station in an old German hospital; but on account of mud, bad roads across No Man's Land, and congested traffic, it could not evacuate patients to the triage that night.⁴ Ambulances were therefore engaged in collecting the wounded from the forward area; these were cared for at an improvised hospital operated by the dressing station. Next day 4 ambulances carried 16 litter patients to Bernecourt, and by evening of the 14th this company had transported 600 cases.⁴ Ambulance Company No. 355 also moved forward to this point. The congested condition of roads greatly delayed evacuations, but for this there was no remedy. Ambulance Companies No. 354 and No. 356 were used to clear field hospitals. The former soon moved to Euvezin, Flirey, and Bouillonville and the latter to the vicinity of Manonville.⁴

FIELD HOSPITALS

When the divisional front was contracted in preparation for the offensive, Field Hospital No. 355, the divisional gas hospital, retaining its position near Royauemeix, was designated as the divisional triage.⁷ It operated in the latter

ST. MICHEL
89TH DIVISION

Scale In Kilometers



Battle lines, taken from Final Report, Gen. John L. Pershing, September 1, 1919, are approximate.

capacity until September 15, evacuating most of the cases it received direct to Evacuation Hospital No. 1 or to the base hospitals at Toul, and remaining in this location until it left the sector.⁷ Field Hospital No. 353, just outside of Andilly, was prepared to receive nontransportable cases, but none was sent to it there.⁷ It then took station at Bernecourt, moving later for one day to Flirey, after which it returned for station to Bernecourt.⁸ This unit was well equipped with an X-ray plant and other facilities for operations.⁹ Field Hospital No. 354, at first in reserve at Andilly, moved to Euvezin on September 14, when it received some 60 patients, using the church as a hospital ward.



FIG. 62.—Field Hospital No. 353, 89th Division, at Bernecourt, France, during the St. Mihiel operation

On the afternoon of that same day it moved to a point 2.5 km. ($1\frac{1}{2}$ miles) east of Euvezin, there operating the triage until the 19th, when it was placed in reserve.⁸ Field Hospital No. 356, originally in reserve at Andilly, moved to Bernecourt on the afternoon of September 12 and began to receive patients the same day. On September 19 it became the divisional triage and received an average of 119 cases daily during the remainder of its stay in this sector.⁸

When the lines became established, a detachment of Field Hospital No. 354 was detailed to the emergency hospital at Bouillonville, where emergency and nontransportable patients were received. At this point a degassing station was put into operation, and later a delousing and bathing plant. By these means the incidence of skin diseases and lice infestation was kept low until the division was relieved from the sector early in October.⁹

THE 42D DIVISION

On September 11 the 42d Division was assembled in the *Foret de la Reine*, with the exception of one battalion of the 83d Infantry Brigade and one battalion of the 84th Infantry Brigade, which had relieved battalions of the 89th Division on the night of September 10–11.¹⁰

On the night of September 11–12 the elements of the division moved up to the vicinity of their attack positions, the 83d and 84th Infantry Brigades each sending one company forward to relieve elements of the 89th Division in the front-line trenches.¹⁰

At 5 o'clock on the morning of September 12, after a four-hour artillery preparation, the division moved to the attack.¹⁰

Upon the arrival of the leading elements at the enemy's first-line trenches, the artillery fire, which had been concentrated on these trenches from the time of the jumping off of the Infantry, started to roll forward at the rate of 100 meters (109 yards) in 4 minutes. The Infantry followed the barrage closely, and on the left experienced very little difficulty after breaking through the enemy's first line of defense. On the right the enemy defense was more vigorous. However, this was shortly overcome and by 12 o'clock both the 83d and the 84th Infantry Brigades had reached the objective of the first phase, first day, and were advancing beyond it.¹⁰ The advance from this point was very rapid, and by 2.10 p. m., on September 12, both brigades had arrived on the first day's objective. Late that afternoon orders were received directing an advance to the objective of the first phase, second day. However, because of impending darkness, the advance was not made to this objective until 6 o'clock the next morning.

At 10 a. m., September 13, both brigades had taken their portion of the first phase, second day's objective, and were consolidating it. Shortly afterwards orders were issued to advance to the army objective. This merely consisted of advancing the left of the line, as the right was already resting upon this objective. No resistance was met in this operation.¹⁰

This division remained in the front lines on the *St. Mihiel* front until September 30, 1918, when, beginning on that date, it was relieved by the 89th Division and started moving to the vicinity of *Souilly (Meuse)*.¹¹

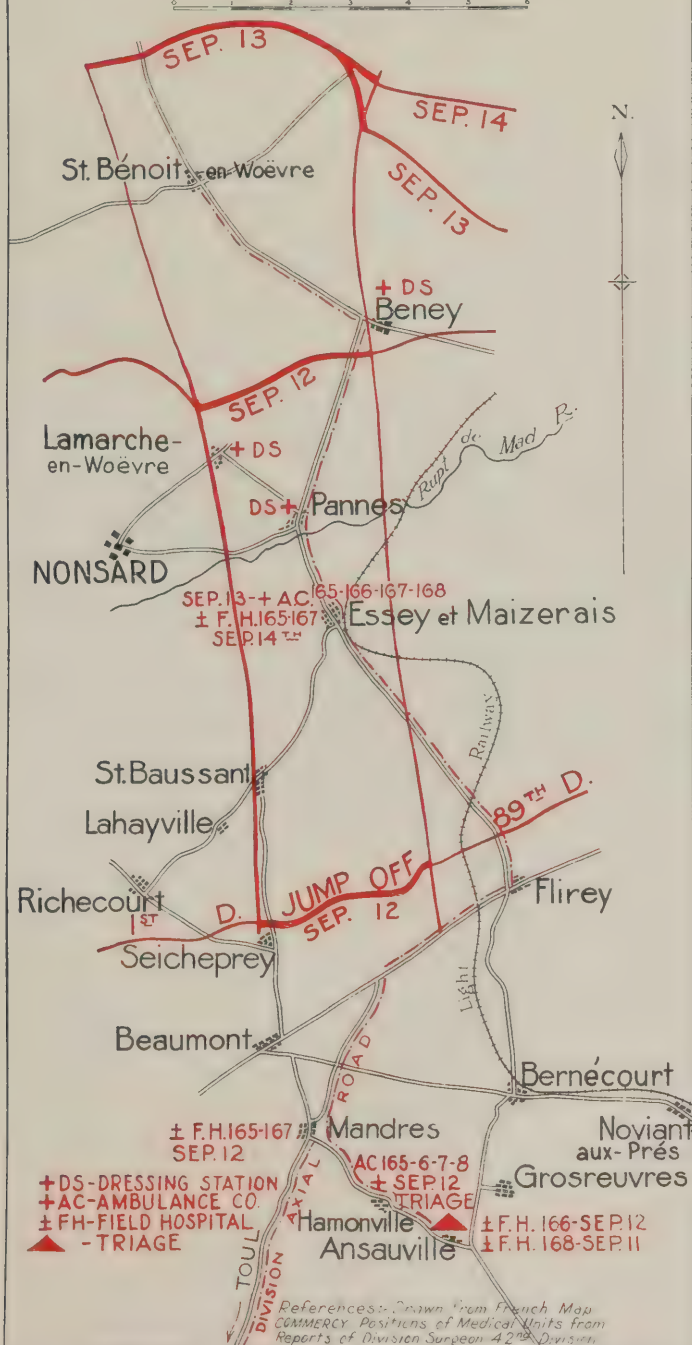
MEDICAL DEPARTMENT ACTIVITIES

On September 10 the division surgeon's office had reached *Bruley* and the field hospital section was assembled in *Foret de la Reine*.¹² At zero hour, September 12, a dressing station was in operation at *Hamonville*, where reserves of all the ambulance companies were assembled.¹³ Other stations were later established at *Pannes*, *Lamarche*, and *Beney*. The divisional triage, operated by ambulance company personnel, was established at *Ansauville*, and two field hospitals (No. 166 and No. 168) prepared to receive patients.¹³ These formations occupied a large barn which lent itself readily to their purpose and afforded facilities for a receiving ward, shock and recovery wards, and operating room, etc.¹² During the 24 hours following the attack, evacuation of the wounded was practically impossible because of the destruction of roads where

ST. MIHIEL

42ND DIVISION

Scale In Kilometers



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

they crossed No Man's Land, and the consequent blockade of traffic.¹³ At this time German prisoners were employed in numbers for the portage of the wounded, especially across No Man's Land. Fortunately, casualties were few, but on the 13th, after the 42d had attained its objective in front of strong enemy positions, the number of wounded increased considerably.¹³ As the line moved forward, Field Hospitals No. 165 and No. 167 moved to Mandres, where they were held in reserve.¹² On September 13 the ambulance companies opened a triage at Essey, through which, during the ensuing 24 hours, 584 cases were evacuated.¹⁴ The two field hospitals which had been located at Mandres (No. 165 and No. 167) moved up to Essey on the 14th to cooperate



FIG. 63.—Dressing station operated by Ambulance Company No. 167, 42d Division, at Essey, France

with the triage. Though not required to function as hospitals, they took charge of the shock and operating rooms of the triage, and thus the wounded received prompt and efficient surgical care within 10 kms. (6.2 miles) of the front.¹² The hospitals at Ansauville (No. 166 and No. 168) were ordered to Beaumont on the 21st and there functioned until the 28th. Field Hospital No. 167 moved on September 26 to Nonsard.¹²

Ambulance service was so organized at this time that each ambulance company evacuated casualties from the infantry regiment of corresponding number, detailing an officer and a sergeant to the regiment for liaison service. Similarly a liaison officer, assigned to the artillery as a whole, was charged with the duty of locating all its aid stations and arranging for evacuations

from them by cooperation with the ambulance companies evacuating the nearest Infantry regiments. Casualties from Machine Gun Battalions and smaller units were evacuated by the ambulance companies serving the Infantry to which they were attached. This proved to be an extremely satisfactory method. By maintaining constant communication between liaison officers and the ambulance company bases as well as the triage, accurate information was promptly available concerning conditions at the front, with the result that emergencies and rapid movements to and from the line were covered more readily than had been the case previously.¹⁴

In this division the medical supply unit was always established with the triage, and when conditions demanded, an auxiliary supply station was sent forward to the advance ambulance company dressing station. From the triage and the dressing station, supplies were carried forward by ambulances and litter bearers, respectively. As written or verbal requests from surgeons with the troops were promptly filled, it was seldom that an emergency arose which demanded a special trip by ambulance. Vehicles bringing patients to the rear returned to the front with supplies. The following is quoted from the medical history of the 42d Division:¹⁵

The difficulties to be met and overcome by the medical supply unit of a division are of a unique character. A fairly comprehensive idea of them may be formed if one will draw a mental picture of managing the only drug store in a city of 30,000 people, operating it day and night, and frequently, sometimes daily, changing its location. There are only eight clerks, for no more can be obtained, and transportation consists of two 3-ton trucks operating over congested roads. The community of which the unit forms a part is frequently bombed and shelled.

THE 1ST DIVISION

On September 6, 1918, the 1st Division commenced the relief of troops on the line of resistance in the western part of the sector held by the 89th Division. The relief was completed on the night of September 7-8. The post of command of the division was opened at Rangeval, 9 a. m., September 8. At this time the commanding general of the division assumed command of the new Beaumont sector, held by one battalion of the 89th Division on the line of surveillance and by the 1st Division with attached units on the line of resistance in the northern part of the Foret de la Reine.¹⁶

The division attacked at 5 a. m. September 12, passing through elements of the 89th Division on the line of surveillance. The division was the left flank division of the Fourth Corps and had the mission of covering its own advance as well as the advance of the divisions on its right.¹⁶

Despite very unfavorable weather conditions, all infantry of the division was in place at the jumping-off line, Seicheprey—Marvoisin, and attacked on time.¹⁶

The first objective was reached on time at a mean hour of 5.40 a. m. This objective, from east to west, was the southeast bank of the Rupt de Madt to Richécourt, thence a box inclosing Richécourt and the open ground on the northwest. Up to this point few casualties were suffered. These were mainly from artillery fire.¹⁶

The second objective was taken on time also, with few losses. This objective was an arbitrary line passing north of the enemy position northwest of the Rupt de Madt.¹⁶

The most serious resistance of the day was encountered between the second and third objectives at the southern edge of the Quart de Reserve. The enemy's principal line of resistance was through this woods, and much opposition was encountered here.¹⁶

The third objective was reached between 9.30 and 10 a. m. The division's third objective was the first phase of the first day's objective, as prescribed by Fourth Corps orders, and passed through the northern edge of the Bois Rate.¹⁶

The Infantry went forward at 11 a. m. and took the first day's objective at about 12.30 p. m. This objective was the defensive position marked by the towns of Lamarche—Nonsard, and included the occupation of a defensive left flank running from Nonsard south to a junction with troops of the French Second Colonial Corps at the Bois de Gargantua. This position also was taken without serious losses, and consolidation was begun.¹⁶

At 5.45 p. m., September 12, the infantry advance was resumed, and at 7.45 p. m. the objective bounded by the Decauville railroad was reached. At 10 p. m. on September 12 one company of the 28th Infantry was astride the Vigneulles—St. Benoit road, with its left protected by the 16th Infantry and its right protected by the 26th Infantry.¹⁶

During the night of September 12–13 exploitation by the division was continued. To insure the safety of the rapid exploitation to the north, in an endeavor to effect a junction with the Fifth Army Corps, the division was given, as reserve, two battalions of the 42d Division, which were ordered to be in the vicinity of Lamarche by 4 a. m. September 13. The division also was given one regiment (eventually one brigade) of the 3d Division as division reserve. On the arrival of the troops of the 3d Division the two battalions of the 42d Division were released from the reserve of the 1st Division.¹⁶

Thus reinforced, the 1st Division extended its left flank, whose protection was assured by the 1st Infantry Brigade. The 2d Infantry Brigade advanced in force at 3.15 a. m., September 13, and occupied all routes leading north and east from Hattonville and Vigneulles between 8 and 10 a. m. the same day. Complete contact with the 26th Division, Fifth Army Corps, in the vicinity of Vigneulles, was obtained at about 9 a. m. September 13, when the provisional squadron, 2d Cavalry, passed through that town for further exploitation. At noon, September 13, the division post of command was established at Nonsard.¹⁶

The division was then regrouped in the vicinity of Nonsard, September 14, where it remained in reserve of the Fourth Corps until September 20, 1918.¹⁶

MEDICAL DEPARTMENT ACTIVITIES

Litter-bearer details from the ambulance companies were attached to the several regiments, and battalion and regimental aid stations were established

in close liaison with the regimental headquarters of the organizations they served.¹⁷ Battalion medical personnel established aid stations as close to the lines as possible, and all such stations moved forward with the advance.¹⁷

AMBULANCE COMPANIES

Dressing stations were established on September 11 at Beaumont by Ambulance Company No. 12 and at Rambucourt by Ambulance Company No. 13, but these organizations moved forward so rapidly that they held one location only a short time during the day.¹⁸ At 9 a. m. Ambulance Company No. 12 moved to Richecourt and then to Nonsard, where it remained until the 20th. Ambulance Company No. 13 also moved on the afternoon of the 12th to Nonsard, where two regimental stations were operating.¹⁹ Ambulance Company No. 2 took station at Xivray et Marvoisin, while Ambulance Company No. 3 located its station first at La Hayville but later—September 13—advanced it to Lamarche.¹⁹ On account of the congested and obstructed condition of the roads, which delayed evacuation to hospitals, a dressing station with extra supplies for a large number of wounded was established at St. Baussant, to operate until the roads could be opened.²⁰ Dressing stations were kept very close to the front during the advance, often ahead of regimental aid stations. The wounded, collected by advancing battalion personnel, were quickly located by dressing station parties, given emergency treatment, and taken to the rear by any means of transport available. As several hours' work was necessary before the engineers were able to repair the impassable roads across No Man's Land, patients were at first carried by litter-bearer detachments to the dressing stations and hospitals, and later by German prisoners.¹⁹ After several hours a few ambulances worked their way across and patients were carried by them to the break in the road. Thence they were carried by litter to a point where they could be placed in ambulances operating between that point and the triage.¹⁹ On the 12th of September, particularly, roads across No Man's Land were crowded with delayed traffic and but few vehicles got across. Among these, however, were a few Ford ambulances, which were thus made available for a front circuit.¹⁹

FIELD HOSPITALS

All the field hospitals took station at Raulecourt September 6. Field Hospital No. 3 pitched tentage and operated the triage and cared for the slightly wounded. Field Hospital No. 12 and Mobile Surgical Unit No. 2 cared for the seriously wounded. The medical supply unit, located at the same place, which forwarded matériel (especially litters) to points close to the firing line. Field Hospitals No. 2 and No. 13 were in reserve.¹⁹ On the 13th, Field Hospital No. 2 advanced to Richecourt, remaining there until September 20, and caring for the divisional sick.¹⁹ Field Hospital No. 13, moving on this date toward Nonsard, was delayed by a damaged bridge across Rupt de Madt. By the time the damage was repaired the hospital was no longer needed at Nonsard and it therefore remained in reserve.²⁰

Legend:
 AC AMBULANCE COMPANY
 FH FIELD HOSPITAL
 + DRESSING STATION
 ▲ TRIAGE
 * CLOSING POINT 127 & 26th DIVISIONS
 ☼ AID STATION
 ☐ MEDICAL SUPPLY DEPOT

Map Labels:
 Hattonchâtel
 Hattonville
 VIGNEULLES
 Heudicourt
 Buxières
 Buxerulles
 Woinville
 Varneville
 Apremont
 Montsec
 Lahayville
 Richecourt
 Xivray-et-Marvoisin
 Bouconville
 Rambucourt
 Broussey-en-Woëvre
 Raulecourt
 Lamarche-en-Woëvre
 Pannes
 Essey-et-Maizerais
 St. Baussant
 Beaumont
 St. Dizier-Metz ROUTE
 Rupt de Madré
 Madré
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 42nd D.
 5th AM.
 12 MG
 18 INF
 5, 6 FA
 16, 18, 26 INF
 12 MG
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Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

Evacuations from the triage were made as follows: Nontransportables to Field Hospital No. 12, at Raulecourt; severely wounded to Mobile Hospital No. 39, at Aulnois (9 km. (5.5 miles) distant); slightly wounded to Field Hospital No. 41 (a provisional evacuation hospital), at Sorcy Gare, 12 km. (7.4 miles) distant, and gassed patients to the appropriate hospital of Justice group, at Toul, 20 km. (12.4 miles) away.¹⁹ From September 23 to October 1 no divisional hospitals were established, the sick being evacuated direct to evacuation hospitals.²¹ Unsuccessful efforts were made to obtain authority to utilize for evacuation purposes the narrow-gauge railroad between Raulecourt and Aulnois.²²

After withdrawal of the division from the line the sanitary train was encamped in the vicinity of Nubecourt until September 27, moving on that date to the vicinity of Julvecourt. There it remained during the two days prior to the entrance of the division into the lines near Charpentry.²⁰

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- (18) *Ibid.*, Part I, 58.
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- (22) *Ibid.*, Part I, 31.

CHAPTER XVII

THE FIFTH CORPS (26TH DIVISION, THE FRENCH 15TH COLONIAL DIVISION, AND 4TH DIVISION)

On September 11, the day before the attack, the Fifth Corps sector, extending from Mouilly on the south to Watronville on the north, was held by the 26th Division on the right, the French 15th Colonial Division in the center, and the 8th Brigade of the 4th Division on the left (the remainder of the 4th Division being in reserve).^{1, 2}

The mission of the Fifth Corps was to attack on the western face of the St. Mihiel salient simultaneously with the First and Fourth Corps on the south. In detail the zone of action of the Fifth Corps was as follows:² Right (south): Genicourt-sur-Meuse (inclusive)—Mouilly (exclusive)—St. Remy (exclusive)—Etang de Lachaussee (inclusive). Left (north): Dieue to Haudiomont Road (inclusive)—stream running east (inclusive).

The infantry attack was launched at 8 a. m., September 12, after an artillery preparation of seven hours.² In this connection it will be recalled that the army plans for the reduction of the St. Mihiel salient, discussed in Chapter XIV, provided for the southern attack to start at 5 a. m., and for the western attack at 8 a. m.

Very little resistance was encountered in the advance of the Fifth Corps, except from a few machine-gun nests, which, with one or two exceptions, were speedily reduced.²

At 9 p. m., the 26th Division extended along Tranchee des Hautes Ornieres, thence south and east to the western edge of Dommartin, thence northwest to the 26th Division sector limit.²

Field Orders No. 19, Fifth Corps, issued September 12, ordered the divisions of that corps to advance to the army objective. It ordered the French 15th Colonial Division not to advance beyond the line Hannonville—Longeau Ferme. This division was to organize the captured front from Montgirmont to Herbeuville (inclusive), and transfer to the 26th Division the captured territory lying between the line Herbeuville—Dommartin and the line Hannonville—Longeau Ferme. The 26th Division was ordered to continue its advance to the line Thillot-sous-les Cotes (exclusive)—Dompierre-aux-Bois (inclusive), maintaining close liaison with the French 2d Light Infantry Division on the south, and paying particular attention to the protection of its right flank.³

During the night of September 12-13 and during the morning of the 13th the attacking forces of the French 15th Colonial and the 26th Divisions advanced their line to the army objective with very little resistance from the enemy. The line established at the end of the day, September 13, may be

roughly described as running through Ville-en-Woevre, southeast through Riaville—Marcheville—Wadonville—Avillers—Hattonville—Vigneulles, inclusive.²

The plan of evacuation in the corps was prescribed in the following set of instructions, neither dated nor numbered, but issued the first part of September, 1918:

PLAN OF EVACUATION OF SICK AND WOUNDED

1. Divisional organization:

(a) Battalion aid station, relays of litter bearers and regimental aid stations will be established by regimental surgeons, under the supervision of the division surgeon. Additional sanitary personnel from divisions not in action may be obtained upon application to the corps surgeon.

(b) Station for slightly wounded: 26th Division, Genicourt; 15th Division (French), Dieue.

The American division in reserve will establish both of these stations.

Those able to return to duty at once will be returned to the line.

All other cases will be evacuated to Evacuation Hospital No. 6, at Souilly.

(c) Division Hospitals will be established by division surgeons as follows:

Collection and sorting stations (triage)—26th Division, Genicourt; 15th Division, Fontaine Brillante.

For treatment of gassed cases—26th Division, Genicourt; 13th Division (French), Fontaine Brillante.

Gassed cases get only preliminary treatment at these hospitals and will be evacuated as soon as possible to the corps gas hospital at Rambluzin. American division in reserve will establish field hospital at Rambluzin to assist in care of gassed cases. A careful sorting must be effected at these hospitals to prevent the necessity of a secondary evacuation from mobile surgical and special hospitals.

For treatment of ordinary sick (except contagious cases), skin and venereal cases, the division surgeon, 26th Division, will establish a field hospital at the chateau at Le Petit Monthairons for all units east of the Meuse. Overflow from this hospital will be evacuated to Evacuation Hospitals Nos. 6 and 7 at Souilly.

2. Evacuation.

(a) Severely wounded, all troops: Americans to Mobile Hospital No. 1 at La Morlette, 1 k. west of Ancemont, Evacuation Hospital No. 8 at Petite Maujouy, 1½ k. east of Senoncourt and Mobile Hospital No. 2 at Recourt. French to H. O. E. Hospital at Grande Maujouy immediately east of Evacuation Hospital No. 8.

(b) Slightly wounded, all troops: Americans to Evacuation Hospitals Nos. 6 and 7, at Souilly and Evacuation Hospital No. 9 at Vaubecourt. French to H. O. E. Hospital at Grande Maujouy and H. O. E. Hospital at Vaudelaincourt.

(c) Sick, skin and venereal cases, all troops: To Le Petit Monthairons and Evacuation Hospitals Nos. 6 and 7, at Souilly.

(d) Contagious cases, all troops: To French contagious hospital at Benoit Vaux.

(e) Gassed, all troops: To gas hospital at Rambluzin, 3 k. east of Heippes on Heippes—Recourt road.

(f) Psychoneurotic cases, all troops: To psychoneurotic hospital at Benoit Vaux.

(g) All evacuations for Corps Troops will be to the nearest medical unit.

* * * * *

MEDICAL DEPARTMENT ACTIVITIES

The chief surgeon of the corps reported that at this time the 4th and 26th Divisions were fairly well equipped, but that in the latter division there was shortage of Medical Department personnel, both commissioned and enlisted.

The corps surgeon's office had no transportation and no sanitary train, except that, pursuant to army orders, United States Army Ambulance Service Section No. 604 was attached to it. Provision for the care of wounded made by the army in rear of the corps consisted of the establishment of 4 evacuation hospitals, 2 mobile hospitals, 1 gas hospital staffed by army personnel assisted by 1 field hospital of the 4th Division, 1 French contagious disease hospital, 1 psychoneurotic hospital and 1 medical supply dump.⁴

The corps surgeon anticipated that there would be a large number of casualties, and he made as thorough preparations as possible for their care while under his jurisdiction. Hospital sites for triage and for gas treatment of American casualties were taken over from the French at Fontaine Brillante and Genicourt, but when the French 15th Colonial Division went into line toward the left it was assigned the former site.⁴

THE 26TH DIVISION

Beginning on the night of September 6-7, 1918, the 26th Division, as a part of the Fifth Corps, entered the line in the Rupt sector east of Mouilly on the western face of the St. Mihiel salient, relieving the French 2d Light Infantry Division.⁴

On September 12, at 8 a. m., the infantry attacked eastward from southwest of Les Eparges. The enemy was driven from Saint Remy and Dommartin-la-Montagne; and after 10 p. m. Longeau Ferme—Dompierre-aux-Bois road, south of Dommartin-la-Montagne was reached.^{4, 5}

During the night of September 12-13 the division occupied Hattonchatel and Vigneulles-les-Hattonchatel.⁴

On the morning of the 13th the division made connection with the 1st Division, which was operating on the south, on the left flank of the Fourth Army Corps, and by this junction of the two divisions the St. Mihiel salient had ceased to exist. On the night of September 13-14 the 26th was relieved by the French 2d Light Infantry Division; and on the night of September 14-15 it took over the general front, extending southeast from a point near Combres to a point near Thillot-sous-les-Cotes. At daylight on the morning of September 15 the enemy attempted a raid against St. Hilaire, which the division repulsed.⁴

MEDICAL DEPARTMENT ACTIVITIES

During the advance evacuation of wounded was greatly facilitated by 12 litter bearers detailed from each line company, who carried the wounded as far as the battalion aid stations. (Regimental stations were not utilized.) Without the aid of these company litter bearers evacuation would have been greatly retarded. The wounded had to be removed at this time by hand carriage, as ambulances could not cross the roadless belt of No Man's Land, and long portage by litter bearers was therefore necessary. Liaison was maintained by runners detailed to the several regimental detachments from ambulance companies until the distance became so great that they could not maintain contact in the absence of motoreycles and saddle animals.⁷ The

division surgeon in his report emphasized the fact that had the motorcycles prescribed in Tables of Organization been available they would have made it possible to maintain liaison after contact by runners became impracticable, and consequently would have promoted cooperation and efficiency in the removal of wounded.⁷

AMBULANCE COMPANIES

In preparation for the advance, Ambulance Company No. 101 established a dressing station behind the right of the division at Mouilly and Ambulance Company No. 102 another at Noyon, behind the left flank.

Ambulance Companies No. 103 and No. 104 were in reserve at Rupt-en-Woevre, where a detachment of Field Hospital No. 104 operated a station for walking wounded.⁸ As the troops advanced, the last mentioned companies passed the others, and in cooperation established a station at La Cloche.⁹

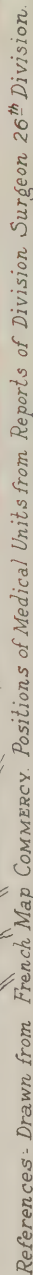
The greatest difficulty encountered by the divisional medical service in this operation was that incident to advancing the dressing stations, as roads across No Man's Land were impassable until repaired by the Engineers. As a result of this experience, an engineer squad was organized by each ambulance company and provided with material for making a certain amount of road repairs—an expedient which hastened considerably the movement of their motor transport in subsequent operations.¹⁰ At this time also all trucks belonging to the sanitary train were pooled to form a provisional truck company, with resultant improvement of service.⁷ As signaling between ambulance posts by some form of mechanical apparatus was considered advisable, the signal corps furnished material for that purpose.

FIELD HOSPITALS

The triage operated by Field Hospital No. 101 was located at Genicourt-sur-Meuse, and here also was Field Hospital No. 104 prepared to treat gas cases.⁸ While a detail from the latter operated a station for the slightly wounded and the sick at Chateau Petit Monthairon, west of the Meuse, on the road to the railroad at Souilly, Field Hospital No. 103, with Mobile Surgical Unit No. 7 attached, was held there in reserve.⁸ The medical supply unit was at Genicourt-sur-Meuse. From the triage at Genicourt-sur-Meuse the wounded were transferred to Evacuation Hospital No. 8, Petit Maujouy, and to Mobile Hospital No. 2 at Recourt; and to Evacuation Hospitals No. 6 and No. 7 at Souilly, gassed cases to the gas hospital at Rambluzin, psychiatric cases to Benoit Vaux. Other hospitals in rear of the division were also available to receive cases as required.^{11, 12} After the infantry advance and the establishment of a dressing station at La Cloche, the triage was advanced to Mouilly, where it was operated by Field Hospital No. 104; there were only a few admissions while it was located at that point.⁹

When the division took over the general front on the night of September 14-15 redistribution of medical department units proved necessary. A dressing station was opened at Les Eparges on the left by Ambulance Company No. 104, with the 103d in reserve, and another at Dommartin-la-Montagne on the

Scale In Kilometers



Battle lines taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

right, by Ambulance Company No. 102, with the 101st in reserve.⁹ The triage (Field Hospital No. 104) was established at Vaux les Palameix. Field Hospital No. 103 then cared for the seriously wounded at Troyon-sur-Meuse, and Field Hospital No. 102, at Petit Monthairon, cared for the sick. Field Hospital No. 101 remained in reserve at Genicourt-sur-Meuse.¹⁰

The following extracts are taken from a report made by the division sanitary inspector concerning matters of interest to the Medical Department in the St. Mihiel operation:¹³

Ambulance service was nil in advance of the front line for nearly 24 hours, due chiefly to impassable roads.

Company litter bearers and Medical Department enlisted personnel were generally with their companies and functioned properly.

Observation showed it to be desirable that these two things be reported back to the ambulance dressing station for transmission to the division surgeon: (a) Captured medical stations, with a description of them; (b) water supplies, also with a description.

Guards should be placed in charge of captured stations until taken over by the proper departments or until their probable usefulness is no longer apparent.

Medical stations taken from the Germans showed the following noteworthy conditions:

(a) *Construction*.—Proof against shell fire; generally almost absolutely fireproof.

(b) Access to stations was either on a level, as in dugouts on hillsides, or by runways of gradual slope.

(c) A general scheme in stations of—

(1) Officers' quarters.

(2) Office and dispensary combined, with lavish but no unnecessary equipment.

(3) Ample storage room for patients, with beds generally in tiers of three, each provided with comfortable mattress and two blankets, the arrangement showing economy and ample space.

(4) Wheeled litters, both for use on roads and with car wheels for use on 60-cm. railways. Cars fitted for the reception of litters for use on 60-cm. railways. Wooden beds of light weight and wire bottoms and with handles at each end so that they can be used as litters.

(5) Storage of concentrated food in stations; usually canned goulash and compressed peas and rice in paper cartons. Storage of water both in cisterns and in bottles, more generally the latter.

(6) Electric or acetylene lighting.

(7) Gas masks in the shape of a hood, to be tied around the neck of unconscious wounded. Extra masks.

(8) Portable individual oxygen sets in cases.

(9) Portable medical and surgical equipment completely filling and economically fitting into a knapsack.

(10) Auto-ambulances for four recumbent and no sitting cases, lighter in weight and with proportionately greater motor power than our G. M. C. ambulances.

(11) Medical wagons; light, four-wheeled, two-horse, cut-under type, with compartment for equipment, hooped roof and tarpaulin cover.

(12) Diagnosis tags with data spaces similar to our field medical card, but without inclosing envelope.

THE 4TH DIVISION

During the operations in the St. Mihiel salient, the 4th Division held the subsector des Hures, extending from Watronville to Cote 372, inclusive.¹⁴

The 59th Infantry had relieved elements of the French 10th Colonial Division and the French Light Infantry Division September 5 to 7, 1918, and held this sector throughout the operation. The 12th Machine Gun Battalion

was in the front line with the 59th Infantry. The 58th Infantry remained in support in a position of concealment north of the Sommedieue—Haudiomont Road. The remainder of the 4th Division (less the 4th Field Artillery Brigade) constituted the Fifth Army Corps Reserve. The 4th Field Artillery Brigade had been temporarily detached from the division on September 7 and was attached to the 26th Division and the French 15th Colonial Division. The 4th Division did not take part in the attack.¹⁴

Activities on September 14 took the form of an attack on Fresnes and Manheulles. The formation was taken up at 10.30 p. m. and both places were occupied before 2 p. m.¹⁴

During the night of September 14–15 part of the 59th Infantry was relieved in the front line by the French 15th Colonial Infantry Division. The 58th Infantry also moved back from its position in support.¹⁴

MEDICAL DEPARTMENT ACTIVITIES

At the beginning of this operation the use of bandsmen as litter bearers was prohibited by general orders, but litter-bearer service to Infantry troops was increased by the detail of the following number of men from each organization: Rifle company, 10; machine-gun company, 8; headquarters company, 12; supply company, 6. This arrangement provided 146 such bearers to a regiment of infantry. These men were ordered to report to their respective medical officers, without rifles, at the beginning of the operation.¹⁵

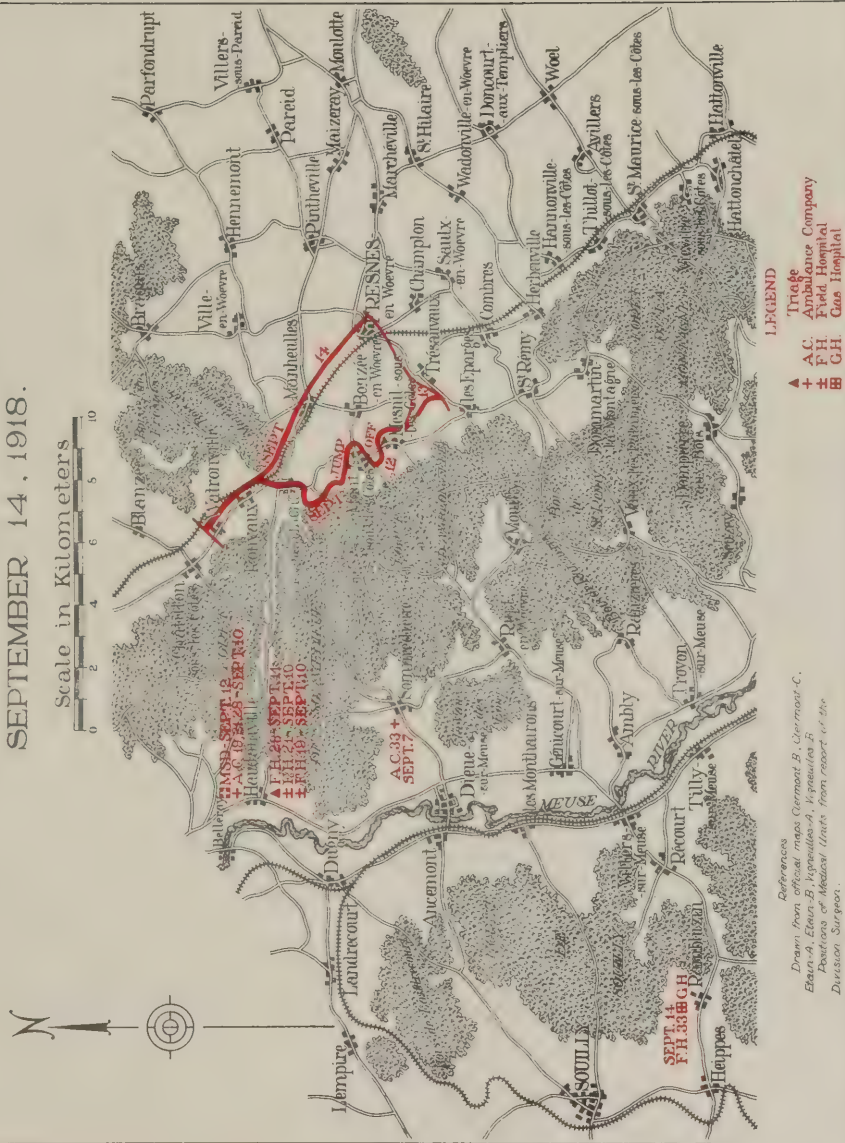
SANITARY TRAIN

The sanitary train, less Ambulance Company No. 33, which had proceeded to Sommedieue, was advanced to Haudainville and its vicinity. There Field Hospital No. 28 opened for the reception of all classes of cases and also as divisional triage, while Field Hospital No. 33, detached for service with the Fifth Corps, moved to Rambluzin to reinforce the gas hospital there. Elaborate and complete preparations were made by the corps (q. v.) for evacuation from the triage, and there is no record in the divisional history that divisional hospitals, other than Field Hospital No. 28, were established. A total of 522 patients passed through the triage while the 4th Division was in this sector. When the division moved to the vicinity of Lemmes, Field Hospital No. 21 was opened near that town for the reception of divisional sick, and the remainder of the train was held in reserve.¹⁵

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- (2) Special report of recent operations, Fifth Army Corps, September 25, 1918.
- (3) F. O. No. 19, Fifth Army Corps, A. E. F., September 12, 1918.
- (4) Outlines of Histories of Divisions, U. S. Army, 1917–1919, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College, 1700 (26th Division).
- (5) Map 26th Division, St. Mihiel operation.

ST. MIHEL OPERATION FOURTH DIVISION SEPTEMBER 14, 1918.



- (6) Report of Medical Department activities, 26th Division, A. E. F., prepared under the direction of the division surgeon (undated). Part II, 25. On file, Historical Division, S. G. O.
- (7) Ibid., Part II, 33.
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- (9) Ibid., Part II, 31.
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CHAPTER XVIII

ARMY HOSPITALS

Casualties were moved by corps and army ambulances from the division hospitals to the army hospitals, as prescribed in the Secret Orders No. 6, July 9, 1918 (quoted in Chapter XI, p. 343). On the southern face of the salient the majority of the wounded went to Evacuation Hospital No. 1 and to Mobile Hospital No. 3, at Sebastopol Barracks,^{1, 2} or to the hospitals grouped in and near Toul. A considerable number, especially from the 1st Division, were taken to Mobile Hospital No. 39,³ at Aulnois, and to the hospitals at Sorcy, while the hospitals at Pagny, Trondes, and on the right at Chaligny and La Malgrange were but little used.^{4, 5, 6} Most of the wounded on the western face of the salient were taken to Evacuation Hospitals No. 6 and No. 7 at Souilly.⁷

Some of these hospitals were new and had not seen active service in combat before this time. Most of the mobile hospitals had been organized and equipped in Paris during July and August, and several of the evacuation hospitals did not reach France until shortly before the St. Mihiel operation. Equipment of certain units, e. g., Base Hospitals No. 45 and No. 51, was relatively limited.⁸ Though every available hospital unit in France was assembled for this operation, the inexperience of some and the limited equipment of others was the source of considerable apprehension concerning the adequacy of Medical Department provisions should the operation prove protracted. Fortunately, the ordeal was brief and patients comparatively few, thus affording valuable experience to new organizations without breaking them down by overwork and without overtaxing their resources.

Evacuation Hospital No. 1, established February 4 at Sebastopol Barracks, some 11.2 km. (7 miles) from the battle line and 3 km. (1.8 miles) north of Toul, immediately before this operation increased its bed capacity from 900 to 2,800, its personnel now consisting of 97 officers, 92 nurses, and 674 enlisted men. As shown by the evacuation order, this unit, reinforced by Mobile Hospital No. 3, was designed to serve as one of the principal evacuation hospitals for wounded from the south face of the salient.¹ Between September 12 and 15 the two units taken together admitted 2,750 wounded.² The daily admissions from September 12 to the end of that month varied from 460 to 570.¹

There is nothing special to record in respect to the operation of these hospitals, as their procedure was essentially that of all similar hospitals. Upon arrival of a patient all data were taken from his diagnosis tag or field medical card and his name and official status verified from his identification tag. Valuables were placed by the registrar in the hospital safe and the patient, clothed in pajamas, went to the preoperative ward. Here morphine, strychnine, and antitetanic serum were administered if indicated and the patient was pre-

pared for operation, except that shock cases were sent immediately to the special ward provided for them. Radiographic examination was made in cases of probable bone injury or retained missiles. These patients then went either to the operating room or to a surgical ward, according to the decision of the operating surgeon based on radiographic findings. A separate operating room was provided for patients with injury to the eye or ear, while appropriate jaw injuries were treated by the dental surgeon. It was not found practicable, however, to assign special types of cases to certain operators; the several teams attended to all cases admitted during their respective tours of duty.¹

Cooperating with Evacuation Hospital No. 1 at Sebastopol Barracks during the St. Mihiel operation, Mobile Hospital No. 3 maintained 200 beds and brought up to a total of eight the number of operating teams there on duty.¹

JUSTICE HOSPITAL GROUP

The group of hospitals at Toul, where later a hospital center was organized—Justice hospital group—was formed in part to meet needs imposed by the St. Mihiel operation. Numbers of extensive permanent barracks were taken over by the Medical Department, and medical organizations were installed in them as follows:⁹

	Beds
Base Hospital No. 45, Caserne La Marche.....	2,300
Base Hospital No. 51, Caserne Fabvier.....	2,000
Evacuation Hospital No. 3, Caserne Perrin-Brichambault.....	1,000
Evacuation Hospital No. 14, Caserne Perrin-Brichambault.....	1,000
Army Red Cross Hospital No. 114, Caserne Luxembourg.....	1,500
Provisional Gas Hospital, Annex Caserne La Marche.....	650
Contagious Hospital, Caserne A. R.....	600
Neurological Unit No. 2, Caserne Fabvier.....	700

With the exception of Caserne Luxembourg, these barracks were situated close together on the Rue Justice, about 1.6 km. (1 mile) from the center of the city of Toul.⁹

Twelve hundred reclassified enlisted men of the line from the 1st Depot Division at St. Aignan were ordered to Toul for distribution to the various hospitals on both sides of the St. Mihiel salient; most of them were then sent to Souilly for further distribution. These men were quite untrained, a number were in rather poor physical condition, most were poorly equipped, and the incompleteness of their personal records was a source of considerable correspondence.

The greatest difficulties of the hospitals at Toul arose from the following causes: (1) Inadequate personnel—officers, nurses and enlisted men; (2) limited medical supplies; (3) delay in procuring suitable articles for diets; (4) incompleteness of the personal records accompanying reclassified men received from the 1st Depot Division to reinforce the personnel of the several hospitals; (5) lack of organization of a suitable triage.⁸

There was some lack of surgical instruments at first, but surgical teams sent to help out brought their own supplies, and it was possible to keep instruments in continuous use during the 12-hour tours of duty of each team.¹⁰

A triage system, extemporized for service during the St. Mihiel operation, proved so adequate to the needs existing at that time that it was continued for several months. Almost all patients admitted to the hospitals at Toul were wounded who were easily classified, and numerous evacuations by hospital train prevented congestion. It was not until later, when epidemic diseases appeared in considerable numbers, that triage difficulties became serious and a formal sorting station for the Toul hospital group was established.¹¹

By September 14, 11,000 patients had been admitted to this group of hospitals. In the interval September 1 and September 11, inclusive, 1,998 surgical cases incident to trench warfare had been received, while the number of battle casualties admitted in the interval September 12 to September 26 was 8,340. Most of the work done at Toul during this period was similar to that of field and evacuation hospitals. Simultaneously the evacuation and mobile hospitals nearer the front were sending in operated cases, and many secondary closures of wounds were also performed.¹²

The surgical services suffered, particularly during the early active periods, from lack of sufficient enlisted men of the Medical Department. Ultimately, convalescent patients and Class B and Class C men accumulated in sufficient numbers to relieve this personnel of heavy labor. Because of its situation the inflow and outgo of patients of the hospital group at Toul was very great, so that the physical labor involved in admission and evacuation was extremely heavy. For weeks the admissions were over 1,000 a day, and on one day 1,544 wounded and gassed patients were received. Many of the buildings housing surgical hospitals were four stories high and without elevators. The great majority of admissions were stretcher patients who had to be transported recumbent, making thousands of trips for stretcher bearers who carried them up the stairways. Not only patients, but all water, food, clothing, bedding, laundry, and surgical matériel, as well as patients' excreta, were carried either down or up or both. The surgical service alone required a large force of stretcher bearers.¹³ The fracture cases always came to the hospital well splinted.

Despite limited facilities the X-ray service was always efficient. Because of the frequency with which wounds were complicated by fractures or retained missiles, either X-ray photographs or fluoroscopic views had to be taken of over two-thirds of the operative cases. Difficulty was experienced at first in obtaining a complete X-ray plant for each hospital, and later some trouble arose from the uncertainty of the electrical supply from Toul, but, despite these embarrassments, no operative case had to be delayed on account of deficiencies in the X-ray department.¹³

Every hospital had its own laboratory, and there was also a group laboratory where Wassermann tests, blood cultures, and elaborate pathological work could be performed. Autopsies were regularly performed in the hospital laboratories. A wound bacteriological count could be made from cultures in 24 hours, and from a smear in a few minutes. Laboratory supplies were scant at first, and much improvisation was necessary. The group laboratory

prepared Dakin solution and also the gum-salt solution. Very little of the latter was used, however, as it was decided that a citrate transfusion was preferable and that its use should be adopted as a routine practice in all the hospitals at Toul.

Evacuations from the various hospitals here were coordinated by one office, which consolidated their individual statements of evacuable and made arrangements for hospital trains.

From the time of the organization of the Toul group to the latter part of September, 1918, personnel of the medical service was diverted to the care of surgical and gassed patients.

Total admissions in this group during September were divided as follows:

Hospital	Medical	Surgical	Gas	Con- tagious	Neuro- logical	Total
Base Hospital No. 45.....	6,203	1,595	73	663	123	8,757
Contagious hospital.....				914		914
Base Hospital No. 51.....	1,587	2,225	16			3,628
Evacuation Hospital No. 3.....		1,300				1,300
Evacuation Hospital No. 14.....		2,200				2,200
American Red Cross Hospital No. 114.....	100	800				900
Gas hospital.....	824		1,070			1,894
Base Hospital No. 78.....		117				117
Neurological No. 2.....					250	250
	8,614	8,237	1,159	1,477	353	19,940

Base Hospital No. 45 (the "Richmond unit") had reached Toul on August 20, when it relieved Evacuation Hospital No. 14 and Field Hospital No. 355, taking over at the same time some 350 patients in the main hospital building assigned to it and 300 others in the annex for contagious cases, about 0.8 km. (0.5 mile) distant. There was almost no equipment available after the former units moved and for several days thereafter, when a meager supply of essentials was accumulated; difficulties in caring for patients were therefore very acute at first. The buildings utilized were four stories high, without light or plumbing, but in spite of these and other handicaps, especially shortage of labor and an increasing number of patients, 2,300 beds were soon installed. Not until September 21 did this hospital receive the equipment which it had accumulated in the United States prior to departure for France. During the St. Mihiel operation it furnished three operating teams to Evacuation Hospital No. 3. No figures are available concerning the number of patients Base Hospital No. 45 admitted resulting from that operation, but the number received during September is given as 8,757, with 142 deaths. The functions of the hospital at this time were essentially those of an evacuation hospital.¹⁵

Base Hospital No. 51 had arrived in Toul on August 27 and was located near Evacuation Hospital No. 14 in a centralized group of four-story barracks and other buildings.¹⁶ By intensive effort these were prepared for the reception of patients, and some supplies were received from the French stores in the group. On September 5 the unit began to receive patients and, as its nurses had not yet arrived, 100 enlisted men from the orthopedic battalion and certain convalescent patients were assigned to it to assist in ward service. Deficiencies in equipment were met to a certain extent, the surgical instruments

employed in this emergency being supplied from belts of the officers and enlisted men. Prepared dressings were employed and a sterilizer extemporized. The X-ray plant was installed by September 11. From September 10 to 17 admissions were: 300 medical and 807 surgical; total, 1,107; and from September 17 to 24, 197 medical, 501 surgical, and 2 gassed; total, 700.¹⁷

Evacuation Hospital No. 3 was located in the Perrin-Brichambault Barracks of the Justice group, 2 km. (1.2 miles) west of Toul, where it was to care for the seriously wounded; while Evacuation Hospital No. 14, to the west, was to receive both the seriously and the slightly wounded, chiefly the latter.

A spur from the railway ran to the rear of the main building of Evacuation Hospital No. 3, and it was from this point that all evacuations from the hospital were made. The organization had reached its location August 24 and within one week had 12 operating tables and 1,000 beds in readiness. An exchange for litters, blankets, and splints brought in by patients was organized. Several additional operating and shock teams had joined, and a splint team was organized. During emergencies the teams were on duty for 12 hours each. An adequate supply of instruments was available. Patients entered with either diagnosis tags or field medical cards. Eventually the latter were provided in the hospital for all cases, although at times they had to be improvised. Of the 1,178 patients received from September 12 to 16, inclusive, the majority arrived in the first 24 hours. During this period there were 693 operations and 42 deaths.¹⁸

Patients were admitted to a receiving ward where a medical officer quickly sorted the cases into three classes, as follows: Walking wounded (sent to the dressing room); gassed and medical cases (sent to special wards); wounded, on litters (the majority), sent to a second triage or preoperative ward. These patients received 80 per cent of the professional care given in the hospital.

At the preoperative ward the wounded were undressed and sorted. Dressings were removed, wounds carefully examined, and decision reached concerning further disposition of the individual patient. The officer in charge of this ward proved to have great responsibility, for on the accuracy of his decisions depended to a large degree the success of the hospital. From this point patients passed to one of several destinations: (*a*) Evacuation wards: Simple bullet wounds or other uncomplicated, relatively slight injuries. (*b*) Wards for retained cases: Perforating and nonaspirating wounds of the chest. (*c*) X-ray room: Fractures; retained missiles. (*d*) Shock ward: Suitable cases, including all those with blood pressure below 100. (*e*) Operating room: Hemorrhage cases and those with perforating aspirating wounds too serious to evacuate.¹⁹ The majority of cases passed to the X-ray department, but if findings there were negative in suitable cases the patient went at once to the evacuation ward.

The dressing room constituted a third sorting station, whither ambulant patients were sent from the receiving ward. Here also great care was necessary in the classification of patients, for some with apparently slight injuries were actually found to be seriously or even dangerously wounded. Occasionally a man walked in who had received an injury to the large blood vessels of the arm, or a compound fracture of the skull. At the dressing room all

patients were dressed, and those thought to require immediate operation were sent to the preoperative ward.

Note was made at each sorting station whether tetanus antitoxin had been given. The hour when the wound was received and the time of admission to hospital were entered on the field medical card. The shock ward provided for patients whose blood pressure on admission was below 100 and also received certain cases from the operating room.²⁰

Briefly, the procedure in caring for patients was as follows: Waiting patients were kept warm by the use of blankets and hot drinks. Patients were bathed and their clothing changed—a procedure not possible at most places where this hospital had served. The anesthetic of choice was ether, administered by the drop method. Thorough removal of devitalized tissue was the rule, and there were no primary closures except in a few early cases of knee-joint injuries. Injuries of this joint were thoroughly débrided and any foreign body found removed in its bed of bone. If infected, free drainage was established by lateral incision and early passive movement given, followed in a few days by active movement. These joints were never immobilized. Whenever possible, foreign bodies in other localities also were removed. Head injuries were always operated under local anesthesia. Perforating rifle wounds of the chest were usually not operated unless of the aspirating type, but such cases were carefully observed for hemothorax and infection. Retained missiles were removed at the primary operation only when superficial in the lungs or free in the pleural cavity. Abdominal injuries were given preference in the operating room, the operative procedure being the same as in civil practice. Injuries to the long bones were treated by removal of all ragged tissue and loose bone fragments and the limb was then immobilized in either a Thomas or a posterior Cabot splint. Extensive injuries of soft parts were débrided and immobilized. Nerves were sutured at the primary operation. Dressings were applied loosely, as a rule, and seldom were drainage tubes employed, but frequently dressings were saturated with Dakin's solution. Amputation was performed only when the nerve and blood supply was completely destroyed, or in case of progressive gas bacillus infection. The skin was conserved as much as possible, and the stump never closed. Postoperative progress was corroborated by frequent laboratory examinations.²¹

Arriving at Toul on August 16, Evacuation Hospital No. 14 was located in the Perrin-Brichambault Barracks, a group of buildings formerly occupied by a French regiment. After proper policing it made a very good location for hospital purposes, except that the height of the buildings, without elevators, incommoded service in their upper stories, and the water supply, though fairly good, was limited in quantity. There were no facilities for storage of water, with the result that at times the supply was entirely exhausted. The buildings were lighted by electricity, with special lighting facilities for the operating pavilion.²² The personnel included:²³

	Officers	Nurses	Enlisted men
Assigned.....	34	40	234
Attached.....	36	7	24

During periods of greatest activity the number of nurses proved very inadequate. This evacuation hospital had not functioned prior to this time and it was as yet without experience. Its equipment was not more than 60 per cent complete.

As this hospital was designated for the treatment of both slightly and seriously wounded, more particularly the former, special attention was given to the arrangement of the receiving ward, and of the sorting and the operating rooms, with a view to lessening the distance patients would have to be carried by litter. Eleven operating tables were made available. As a rule, X-ray examinations were made, if necessary, of all seriously wounded patients, although, as only one X-ray machine was available, the work was much retarded. All splinting was done by special teams, after the operators had completed their work. Jaw cases were operated by the dental surgeon or by other members of the surgical staff after consultation with him. Shock was treated by specially trained medical officers.²⁴

The most active period for operations was between September 12 and 18, inclusive, during which time five teams operated during the day and four at night. A 12-hour shift for teams was found to be satisfactory in reference to the quantity and quality of their work and to their welfare.

As the loading platform for trains was but 182 meters (200 yards) from the hospital, evacuation was simple, and nearly all patients were carried directly to the trains by litter. This was very arduous work, particularly when patients had to be carried down the narrow stairways from the second or third story. At first a nominal check list was required for all patients sent by train, but as making this list, with the limited clerical facilities then available, delayed evacuations, its use was abandoned.

The following table shows the classes of patients treated by this hospital:²⁵

	September—							Total
	12	13	14	15	16	17	18	
Total admissions	6	510	308	198	264	139	34	1,459
Operations	0	99	143	177	171	86	31	707
Evacuations	0	43	328	130	160	419	79	1,159
Prisoners	0	64	14	8	10	1	0	97
Deaths	0	4	2	1	1	2	3	15

Army Red Cross Evacuation Hospital No. 114 had formerly consisted of 7 medical officers and 35 nurses and nurses' aides. It then occupied 30 buildings and cared for French orphans and maternity cases. It was taken over by the Army, reenforced by Red Cross personnel (McCoy unit) and by a field hospital, and equipped by the Red Cross as a military hospital, with between 1,000 and 1,500 beds.⁸

The provisional gas hospital of the Justice group was organized August 2, 1918, to meet the emergency occasioned by the St. Mihiel operation.²⁵ Its personnel consisted, at first, of 3 officers permanently assigned, 6 others who

joined, 14 nurses and 9 noncommissioned officers of the Medical Department, and of 50 Class B men from the training battalion depot at St. Aignan. Forty more men from that battalion joined on September 19, and twenty French women were employed as cooks, waitresses, laundresses, etc. The formation occupied a part of Caserne La Marche, originally constructed for hospital purposes and used in peace time by the French as a hospital for the local garrison here. For this reason these buildings were perhaps better suited for hospital purposes than were other buildings of the Toul group. The four buildings made available gave adequate provision for 650 patients, with suitable rooms for stores and service. A Bessonneau tent was used as a receiving ward and sorting station. In one corner of this was a screened-off section for the treatment of patients intoxicated by phosgene, thus providing for the immediate administration of oxygen or treatment by phlebotomy, etc. Mustard gas cases were sent to a building equipped with two French portable bathing machines supplied with running water. The marked shock of phosgene gas cases and the sloughing of the respiratory mucosa of mustard gas cases were the most striking clinical phenomena noted by the gas service here. Other buildings were used for an officers' ward, for mild cases of mustard gassing, and for convalescents recovering from the effects of phosgene.²⁵

The hospital administration was embarrassed by lack of stenographers, typewriters, blank forms, bed linen, and other equipment.²⁵

From September 10 to October 7 the unit admitted both medical and gas cases, 1,336 of the former and 1,351 of the latter.

Neurological Unit No. 2 was established in Caserne Fabvier to care for psychoneurotic cases. Its personnel consisted of 4 medical officers, 10 nurses, and 15 enlisted men from Base Hospital No. 117. The capacity of this hospital was 700 beds, but only 259 neuropsychiatric cases were treated at Toul during the first month of the hospital's operations there. The number admitted during the St. Mihiel operation is not reported in the medical history of this unit, but of the number mentioned above 63 per cent were returned to duty. Practically all the cases received were psychoneuroses, the psychoses being exceptional.

OTHER ARMY HOSPITALS IN ST. MIHIEL OPERATIONS

Evacuation Hospital No. 13, which had landed at Brest on August 26, was quickly transferred to Chaligny, southwest of Nancy. Here from September 2 to 23 it occupied buildings and was prepared to receive patients, but because of its location only 105 cases were sent to it during this period.⁴

Mobile Hospital No. 4, assembled and organized in Paris August 13 to 31, was rushed by rail to Trondes, where it arrived early in September. It here received patients from September 14 to 30 and was then moved to the Meuse-Argonne area. At Trondes, with Field Hospital No. 171 and Ambulance Company No. 310, it functioned as a provisional evacuation hospital. It furnished from its own equipment hospitalization for approximately 350 patients. Field Hospital No. 161 furnished tentage for about 200 more, but there were only 235 admissions during the period mentioned. Eighty-five operations were per-

formed, with no deaths. Cases received here did not include the seriously wounded.⁵

Evacuation Hospital No. 12, which had reached France August 31, 1918, moved immediately to Pagny-sur-Meuse, arriving there September 3. Here ten Adrian barracks and a large Bessonneau tent were found ready for its occupancy. A section from Base Hospital No. 117 and Evacuation Ambulance Company No. 4 were already located at the same place and a few patients had accumulated.

Ten days were spent at Pagny-sur-Meuse by Evacuation Hospital No. 12, during which time only a few cases were received, most of them being slightly wounded. The hospital, however, was organized and gained much experience. The location was a poor one for a hospital, and on the evening of September 13 preparations were begun for a movement to Royaumeix. The unit was established in the new location on the 6th, in an old French hospital consisting of four groups of Adrian barracks. Here it performed its first professional services of an important character, receiving patients direct from the front, some 24 km. (15 miles) distant. There were, however, relatively few cases, as the operation had by this time been completed and there were not many casualties in the sector which the hospital was serving.⁶

The hospitals at Aulnois and Sorcy formed in effect one group composed of Mobile Hospital No. 39, at Aulnois, and Evacuation Hospital No. 11 and Field Hospital No. 41, at Sorcy Gare. Ambulance Company No. 41 carried patients from the first named to the latter, and if necessary was to remove the overflow to Toul.

In August, Mobile Hospital No. 39 was functioning at Aulnois with a personnel of 15 officers, 19 nurses, and 80 enlisted men operating a hospital of 85 beds. On the 14th of the month orders were received to increase the hospital to its maximum capacity, yet to be prepared to withdraw at a moment's notice. On August 15 the work of constructing six new barracks and an enlarged operating pavilion, erecting additional tents, and other incidental enlargements, including shelter for a personnel of 150, was begun. The work, performed by enlisted men of the medical department, was completed by September 10. A hundred casualties (reclassified) had arrived on August 30 from special training battalions. When the work was finished it was found that 524 beds could be installed, and the chief surgeon was notified on September 10 that all was in readiness. An additional personnel of 33 officers, 46 nurses, and 100 enlisted men was asked for, but not all of these reported. The actual personnel received was: Officers in operating teams, 14; officers in resuscitating teams, 2; operating-room nurses, 5; ward nurses, 9; enlisted men, 180. Six additional officers also became available. It was estimated that 144 major operations could be performed daily, this hospital being designated to receive only the seriously wounded, though preparations were made with a view to caring expeditiously for any slightly wounded patients who might be received.³

The organization and methods of this unit are discussed in the chapter on mobile hospitals and mobile surgical units.

From Aulnois, evacuation to Sorcy, a railhead of the Paris—Nancy main line, was effected by ambulances and by a narrow-gauge railway, and proved fully adequate. Four recumbent or eight sitting cases could be evacuated by ambulance in one hour and a quarter for the round trip. A narrow-gauge train of 5 cars could carry 45 recumbent cases, requiring 35 minutes to load, 20 minutes to make the trip, and 35 minutes for unloading. By such a train 80 patients were evacuated in one and one-half hours, thus rendering service equivalent to that given by 20 ambulances during one and one-quarter hours.²⁶

Evacuation Hospital No. 11 moved on September 11 from Rimaucourt to Sorcy Gare, where it was to act in conjunction with Mobile Hospital No. 39 and Field Hospital No. 41. It remained at this place about 10 days.²⁷

Its procedure of receiving, caring for, and evacuating patients was like that of other similar units, for as this was the hospital's first experience in campaign it adopted the methods of older organizations, more especially those of Mobile Hospital No. 39.

Among the interesting professional methods adopted, the following are worthy of mention: Abdominal cases were held 10 days and then not evacuated unless so directed by the chief of the surgical service. In head cases where the dura was opened, seven days' retention was the minimum. Perforated chest wounds were evacuated as soon as complicating hemothorax permitted. Patients with retained missiles were held 10 to 14 days. Joint cases and compound fractures were held 3 to 7 days. Simple fractures were evacuated at once. All amputations were held from 7 to 10 days. Spinal cases were held 7 days at first; as they reacted badly it was then ordered that they be evacuated at once.²⁷

No statistical data were furnished by this unit.

The principal evacuation hospitals on the western front of the St. Mihiel salient, viz. No. 6 and No. 7, were located at the railhead at Souilly. Here the Medical Department had secured possession of a French evacuation hospital having a capacity rated by the French at 1,000 beds, by occupying both barracks and tents. Passageways between buildings were floored and roofed and there were concrete shelters (*abris*) instead of dugouts. With this hospital the French turned over all equipment except instruments, yet it was far from being thoroughly equipped from the American point of view. The French plan of a double hospital made it practicable for Evacuation Hospitals No. 6 and No. 7 to work in conjunction here, and it was planned to increase the capacity of the combined units by tents. The personnel was increased by a company of class B men transferred from the Justice group, who were used chiefly as litter bearers.

The consolidated hospital was ready for operation on August 27, but it received no considerable number of patients until September 12–18, during which it admitted nearly all the battle casualties of this front. At this time the capacity of Evacuation Hospital No. 6 was 1,200 beds, and that of No. 7 somewhat greater. Lack of facilities for caring for the slightly wounded and the sick (no camp for their proper care having been prepared) necessitated evacuation to the rear of patients who could with better arrangements have been returned to duty in a few days. Attempts had been made to provide such camp,

but they had failed. This caused overcrowding of these hospitals, but not to such a degree as later during the Meuse-Argonne operation.⁷

Both organizations here had the same layout, but whereas No. 7 had more space, No. 6 had the more complete equipment. The receiving station was common to both, the two hospitals receiving alternately. A large preoperative space allowed the centralization of appropriate cases, which were not distributed to the wards until after operation. All evacuable cases were sent through the "evacuating area," where the more rapid teams worked and through which the slightly wounded passed. Patients were segregated at the receiving ward into "seriously wounded," "slightly wounded," and "medical." Seriously wounded patients were undressed, bathed, X-rayed, and prepared for operation. Except the shock cases, which were sent promptly to the appropriate ward, no surgical case was sent to a ward until operation or dressing was completed.

There were 2 operating rooms for the seriously wounded, each having 3 tables, and 1 room with 4 tables for the slightly wounded. To the latter were assigned two of the best teams, with increased personnel. In this manner it was possible to operate many slight cases in a day, and during the period of most stress the average number cared for daily was 175. Splint teams, which applied splints to all fracture cases, were notably helpful and contributed materially to the output of operating rooms. The schedule for operating teams was 7 a. m. to noon; 1.30 to 6.30 p. m., and 7 p. m. to 6.30 a. m., the teams alternating. This routine, by allowing a full night's sleep every second night and time for meals, helped to keep up the strength of the teams over long periods. At first chloroform was used, but later this was discontinued and ether was the only anesthetic employed.²⁸

On August 27, 1918, Mobile Hospital No. 1 moved from Rouceux to Petit Maujouy, where it had been ordered to report to the commanding officer of Evacuation Hospital No. 8. As the latter unit was using in its entirety the old French hospital, the former chose a site at a crossroads a short distance to the west. After preparing this site, but without having spread more than a minimum of canvas, the unit was ordered to La Morlette to occupy an old French gas hospital consisting of eight semipermanent huts. No tentage was to be erected until after the operation began, and the personnel was ordered to remain under cover during daylight. The location was a good one for an advance hospital, with graveled roads, a good water supply, and electric lights. It secured considerable French equipment and supplies, including beds. To supplement the bed space, if necessary, tent frames were erected but no canvas was spread. Shelter trenches were dug to afford protection against bombing by airplanes or artillery fire, the location being only 6.4 km. (4 miles) behind the lines. Gas alarms were provided and gas drills were conducted.²⁹

The move to La Morlette separated the unit from Evacuation Hospital No. 8, and thereafter it operated independently.

The St. Mihiel operation did not occasion the activity anticipated by this unit. At about 11 a. m. on September 12 four American wounded were

brought in by ambulance, the first active indication that the offensive had begun, no prior notice having been received. With the arrival of the wounded, tents were hurriedly put up, but these were not needed, as the number of patients received was only 141. Twenty-four of the casualties died in hospital and were buried in a cemetery on top of the hill behind the hospital. Many of the wounds were the result of bombing, a fact which accounts for the high mortality rate.³⁰

On September 21 orders were received for the hospital to move to La Claire Chene, adjoining Blercourt, Meuse, and on the 24th the movement was accomplished.

Evacuation Hospital No. 8, which had reached Petit Maujouy by truck on August 26, occupied Adrian barracks and tents and set up 1,000 beds. It remained at this location during both the St. Mihiel and the Meuse-Argonne operations, receiving for the most part only the more seriously wounded. An operating room was provided in an Adrian barrack and furnished with 18 operating tables, one-half the building being used for clean cases, for the preparation of dressings, instruments, etc., and the other half for infected cases. Patients were brought in on litters at one end of the structure, and the litter bearers, after receiving instructions from the chief of the surgical service, carried them to the operating tables indicated. Although the hospital was prepared for work on a large scale, no great number of patients were received until the Meuse-Argonne operation began on September 26.³¹

A special department of this hospital was that in which dental surgery for lesions of the jaw was performed. Special types of splints were necessary to meet the needs of particular cases, and these were made of vulcanite, wire, or metal in some other form. Primary union was the rule if patients were seen early, and results were satisfactory in a series of 72 cases. No case of infection by gas-forming bacilli was found among injuries of this character.

The unit sought to maintain on hand a large supply of instruments and appliances, especially hemostats, débridement scissors, bandage scissors, gloves, and Carrel-Dakin tubing. After teams, temporarily assigned, were advised to bring their own instruments, the acute need for them was met. Prepared dressings proved indispensable. One of the most difficult problems was the provision of fresh linen, for the portable laundry employed by the French for their evacuation hospital was inadequate for our larger units, and another was securing sufficient personnel to perform the arduous duties of carrying litters and digging graves.³²

The field bacteriological laboratory issued the hospital met all requirements and made invaluable reports on wound bacteriology. Other important sections, in addition to the ones specially discussed, were the eye, ear, nose, and throat department, and those pertaining to general service supply, subsistence, and salvage.³²

EVACUATION HOSPITAL NO. 9

On the night of August 28 Evacuation Hospital No. 9 arrived at Vaubecourt, where it occupied a plant not yet entirely completed, but lying near a highway and provided with a railroad loading quay. The structures taken

over consisted of 9 wooden buildings 22 by 110 feet, 3 wooden ward buildings of approximately the same dimensions, 24 Bessonneau ward tents, 16 by 50 feet, 2 wooden operating pavilions 45 by 45 feet, 3 Singer hangars, 40 by 100 feet, 1 wooden H-shaped building 66 by 110 feet, and a mess hall 30 by 80 feet. Other buildings were provided for a disinfecting plant (with baths), an engine room, an electric service station, a gasoline storage room, and latrines. The demands made on the hospital were constant and increased.³³

This was not the case during the St. Mihiel operation, however, as this unit admitted but 13 surgical cases, none of which was a battle casualty, and a small number of medical cases, only a very few of whom were seriously ill. Immediately after this action, as other divisions entered the area, admissions to the medical wards increased rapidly and steadily, many of the cases being very severe.

NEUROLOGICAL UNIT NO. 1 (FROM BASE HOSPITAL NO. 117), BENOITE VAUX

Base Hospital No. 117 was a special neurologic hospital located at La Fauche. On September 2, 4 medical officers and 15 enlisted men were transferred to Benoit Vaux to establish a temporary neurologic hospital of 200 beds for the coming St. Mihiel operation, their number being augmented September 15 by 15 additional enlisted men sent from the parent hospital. No account of the work of this detached unit is of record.

As previously mentioned, another unit from this base hospital operated a neurologic hospital in the Justice group at Toul for the same class of patients from the southern front of the St. Mihiel salient.³⁴

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CHAPTER XIX

EVACUATION FROM THE ZONE OF THE ARMY

From evacuation, mobile and other hospitals at Toul, Sorey, Trondes, Souilly, and Vaubecourt patients were sent by hospital trains to base hospitals located in the advance and intermediate sections.

HOSPITAL TRAINS

There were available at this time 20 American hospital trains, but these not being considered sufficient, in addition, 45 trains were rented from the French.¹ The latter were of various classes. A few were the regular *trains sanitaires*, somewhat like the American trains but smaller. Others were *temporaires*, merely assemblages of passenger coaches provided with some medical equipment and personnel. Still others were *improvisés*, having no special type of cars or of equipment. The last were similar to what in American regulations were designated "trains for patients," and were used like them for the transportation of the less serious cases. As the distance from the front to base hospitals was short, it was thought that this use of these trains would be justifiable, and this proved to be the case. French trains generally were employed for the short hauls to base hospitals near the front, and the heavy, more fully equipped American trains for the longer hauls to hospitals farther to the rear.¹

Heretofore Is-sur-Tille had been the only regulating station, but on September 5 another regulating station was established at St. Dizier, which soon became the more important of the two in so far as evacuation of the wounded was concerned. It was planned to evacuate wounded from the southern face of the salient to Neufchateau, Bazoilles-sur-Meuse, Vittel, and Contrexeville; and from the western face, to Chaumont, Rimaucourt, Langres, and, if necessary, to Dijon.²

Details of the method employed in operating hospital trains were as follows: Reports regarding available bed space (i. e., bed allotments) in hospitals in the advance section were made by the chief surgeon of that section to the regulating station at Is-sur-Tille; in the same way bed allotments in the intermediate and base sections were given to that station by the chief surgeon, Services of Supply, who was also the chief surgeon, A. E. F. The regulating officer at Is-sur-Tille would, in turn, allot bed space in any or all sections to the regulating station at St. Dizier. The duties of the regulating officer at Is-sur-Tille were otherwise solely those of secondary evacuation; that is, evacuation from base hospitals in the advance section to other base hospitals in the intermediate and base sections.²

In accordance with the plan just explained, 19 hospital trains were assigned to Is-sur-Tille and 41 to St. Dizier. The railheads from which trains departed during this operation were: Toul, Sorey, and Trondes-Pagny, on the Toul front; Souilly, and Vaubecourt, on the Verdun front.

As it proved, not all the trains available were needed or were utilized. But 57 train trips in total were necessary to evacuate all the sick and wounded, many trains making several trips. Twenty-nine trips were made by the seven American trains and twenty-eight by the French trains. From September 12 to 25 an average of four trains left the various railheads daily. American trains made round trips in an average of three and one-half days. On the 57 train trips 20,998 patients were carried.

The daily record of departures of trains is given below :³

From—	September—															Total
	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Toul.....	3	4	3	3	4	4	4	4		1	2	1	4	1	38	
Sorcy.....		1		1											2	
Trondes-Pagny.....				1											1	
Souilly.....		1		1		1		1		1	1	1	3	1	11	
Vaubecourt.....								1		1		1	1	1	5	
Total.....	3	6	3	6	4	5	4	6		3	3	3	8	3	57	

From the foregoing it is evident that the great majority of evacuations were from Toul, due, of course, to the fact that the majority of patients entered the hospitals in and near there. Train evacuations were begun almost as soon as patients began to arrive at the hospitals. During the official period of the operation, September 12-16, inclusive, 17 trains left Toul, carrying 539 patients, while 5 trains left other evacuation points, with 725 patients.

The base hospitals to which patients were carried and the number of trains to each are shown in the following table :³

	Trains	Base hos- pitals Nos.		Trains	Base hos- pitals Nos.
<i>Advance section</i>			<i>Intermediate section</i>		
Bazoilles.....	12	18, 42, 46	Allerey.....	6	25, 26, 49
Beaune.....	4	47	Blois.....	1	43
Chaumont.....	9	15	Limoges.....	1	13, 24, 28
Dijon.....	1	17	Mars.....	2	14, 35, 48, 68
Langres.....	3	53	Mesves.....	—	50, 54, 67
Neufchateau.....	2	66	Va Claire.....	1	3
Rimaucourt.....	3	52	Vichy.....	1	1, 19, 115
Vittel—Contrexeville.....	9	23, 31, 32, 36			

The great majority of these hospitals were among the original 50 organized by the American Red Cross.

Patients evacuated to September 19 were classified as follows :⁴

	Wounded	Sick	Gassed	Officers	Allies	Prisoners	Total
Sept. 12.....	862	224	0	25	—	14	1, 145
13.....	2, 503	0	0	34	2	194	2, 733
14.....	574	424	60	8	0	11	1, 077
15.....	1, 594	436	0	54	1	158	2, 243
16.....	1, 070	473	1	35	0	51	1, 630
17.....	1, 474	317	1	42	1	55	1, 890
18.....	244	1, 140	2	25	0	31	1, 442
19.....	948	1, 026	54	38	33	13	2, 112
Total.....	9, 269	4, 060	118	261	37	527	14, 272
Total to Sept. 25.....	11, 248	9, 501	260	453	131	613	22, 206

The number of evacuations listed above is practically double the number of casualties reported immediately after the battle, not including the dead. The apparent discrepancy partly lies in the fact that the official dates of the operation were September 12-16, inclusive, and additional casualties occurred after the latter date, occasioned in great part by artillery fire. Then, and this was of more importance numerically, evacuations included the sick, and they were about one-half as numerous as battle casualties. The influenza epidemic was beginning, and as a matter of fact the few days following the principal struggle saw more men in hospital because of sickness than because of wounds. figures to September 25 showing almost as many sick as wounded. These figures include also sick patients from the six divisions held in reserve in the same area, and from other troops—some 200,000 men.

On the whole, evacuation by rail in this offensive was eminently satisfactory, as more transportation was available than was actually needed. The event proved that the 20 American hospital trains could have transported all the sick and wounded.

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SECTION IV

THE MEUSE-ARGONNE OPERATION

CHAPTER XX

FIRST PHASE ^a

ARMY OPERATIONS

After the St. Mihiel operation, according to Marshal Foch, four things remained to be done to drive the enemy to the Meuse. The Americans were to attack in the direction of Mezieres; the French west of the Argonne to cooperate in the same direction; the British on the St. Quentin—Cambrai front to attack in the direction of Maubeuge, and the combined forces in Flanders toward Ghent.

The American First Army was assigned the entire front from the Moselle to include the Argonne; but for this operation the front of attack was limited to that part of the Meuse. That part east of the Meuse was to be held by three corps—the French Seventeenth, with its left on the Meuse, the French Second Colonial on its right, and the American Fourth extending the line to the Moselle.

Reduction of the St. Mihiel salient had left the lines fairly straight, and the Allies were forced to make frontal attacks. That portion of the line where a break would be most disastrous to the Germans was assigned to the Americans. Success here would deny the enemy the use of the Sedan-Longuyon Railway, which was one of the two principal lines of supply for the German right, drive him out of the Briey country, his main source of iron, and break the great lateral communication line through Carignan and Mezieres. Success farther north would drive the enemy directly back upon his lines of communication, and break direct communication between his right and center; success here would cut off the troops in Belgium and Flanders so that their destruction or capture would be inevitable.

The German strength was so reduced that to meet a serious attack he would be compelled to shorten and thicken his lines. To do this, he must draw in his right, swinging on a pivot at Verdun. If the pivot could not hold, the army was lost. That the enemy realized this danger is indicated by the order issued October 1, 1918, by General von der Marwitz, commanding the German Fifth Army, in which he emphasized the importance of the Longuyon railway and added, "the fate of a large portion of the Western Front, perhaps of our nation, depends on the firm holding of the Verdun front." This

^a Abstracted from Major Operations of the American Expeditionary Forces in France, 1917-1918. Prepared in the Historical Section, Army War College.

order referred to an expected attack east of the Meuse. The Germans apparently had begun to suspect the attack about September 21, and had made preparation to meet it about the 25th.

At this time the German force was concentrated well to the east. From Clemery, on the Seille south of Metz, to the Meuse, he was believed to have 13 divisions in line and 10 or 12 in reserve about Metz. Between the Meuse and the Aisne he apparently had 5 divisions in line.

The line of contact in the front of the American attack ran from Forges, on the left bank of the Meuse, about 15 km. (9.3 miles) north of Verdun, a little south of west to the southern point of the Bois de Cheppy, thence west to the Aisne, with a bend southward in the Argonne. The country here divides itself into three strips—the valley of the Meuse, the valley of the Aire, and the Argonne forest.

The Meuse, flowing northwest, is the principal stream. Flowing between the opposing lines and emptying into this river is the Ruisseau des Forges, marshy and impassable in wet weather. The commanding height of Montfaucon, about 6 km. (3.7 miles) behind the German front, marks the divide between the Meuse and the Aire. The Aire is a small stream generally parallel to the Meuse as far north as Grandpre, where it breaks through the Argonne ridge and flows west into the Aisne. It has no tributaries of importance impeding an advance north. The principal frontline feature here is the high hill of Vauquois, across which the opposing trenches had lain close together so long that the whole hilltop had been fairly blown away by mining operations.

The Argonne ridge separates the Aire and Aisne Valleys. It is heavily wooded and much cut up by deep ravines, running east or west to the main rivers. The German front line here was on Hill 263, which, with Vauquois, constituted a formidable barrier to any movement down the Aire Valley. Just beyond this line, across the whole front, lay a series of wooded areas.

The German outpost zone was about 1 km. (0.6 mile) wide at the Meuse. It had originally run west from the Meuse to the vicinity of Montfaucon; but an abandoned element of the French defenses had been taken over by the Germans and converted into an advance line running across the reëntrant, increasing the width of the zone to about 2 km. (1.2 miles) at the maximum. The front line was known as the Hagen Stellung; the old front line, now modified and treated as intermediate, as the Hagen Stellung Nord.

Behind this lay the battle zone, 5 km. (3.1 miles) deep at the Meuse, narrowing to 1 km. (0.6 mile) behind the Hagen Stellung Nord, then widening again. Its main line of resistance was the Volker Stellung and lay along the line of crests marked by Montfaucon. The withdrawal zone was about 2 km. (1.2 miles) wide. The total depth of these three zones was about 6 to 10 km. (3.7 to 6.2 miles).

The wooded areas across the whole front were carefully organized as artillery positions, permitting cross fire everywhere. More than this, the guns in the Argonne forest and on the heights across the Meuse enfiladed the lines of any attack and possessed excellent observation.

From 5 to 10 km. (3.1 to 6.2 miles) behind these positions, north of Grandpre gap, lay the final withdrawal position, the Kriemhild Stellung.

MEUSE - ARGONNE OPERATION
FIRST PHASE
FIRST ARMY
I-III-V CORPS
SEPTEMBER 26 - OCTOBER 3, 1918.



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

This was a continuation of the Brunnhild position which came down from the northwest to the junction of the Aisne and Aire. It was only partly finished west of the Meuse, but, nevertheless, was very strong. East of the Meuse it was more nearly complete.

The supply system of the whole region was well laid out, each German corps having its own standard-gauge railway line. These led to railheads, where they were continued by a network of narrow-gauge and wagon roads. To facilitate traffic and guard against interruption by shell fire, additional narrow-gauge lines had been built, connecting the forward systems with the standard-gauge lines well back of the railheads and out of artillery range.

The front of the attack of the combined armies was from the Meuse to the Suippe. The direction was Mezieres. The general plan was, first, to throw the enemy upon the line Stenay—Le Chesne—Attigny by attacks on both sides of the Argonne; second, to reach the region of Mezieres, maneuvering from the east so as to overcome the enemy's resistance on the Aisne and facilitate the advance of the armies farther to the west. The first objective was the line Dun-sur-Meuse—Grandpre—Challerange—Somme-Py; the second, Stenay—Le Chesne—Attigny—Reithel. Surprise was one of the main elements of the plan; this General Pétain emphasized in instructions dated September 6, adding: "Commanders will not hesitate to orient their participants toward eventualities directly contrary to the real plans," and giving examples of such false impressions as might be given out. The Americans, not yet having appeared in force here, French troops were to continue to hold the front line as a screen until the night before the attack.

The mission assigned to the American First Army required a penetration of about 16 km. (9.9 miles) to reach the Dun-sur-Meuse line and 16 more to the Stenay line. Since the Argonne was regarded as impenetrable by direct attack, it was to be flanked out by the two armies. The main American attack, therefore, had to be straight down the Aire Valley, penetrating the German lines there by frontal attack. This attacking force had to be connected with the lines remaining stationary across the Meuse by another force acting as pivot.

Three corps, then, were placed on the front between the Meuse and the Argonne. The Fifth Corps, in the center, from Malancourt to Vauquois, was to reduce the Bois de Montfaucon and the Bois de Cheppy, outflanking them from both sides, and to take the line of heights of which Montfaucon itself was the key. The First Corps, on the left, was to swing forward its right, keeping in touch with the Fifth Corps, then attack the Argonne ridge from the east; its left, in the forest, to follow up the enemy's withdrawal and keep in touch with the French west of the Argonne. The Third Corps, on the right, was to hold a pivot on the Meuse and swing its left forward, bringing the whole corps to the river line and keeping touch with the Fifth Corps; to penetrate the German second line promptly and turn Montfaucon, thus assisting the operations of the Fifth Corps; and organize its front on the Meuse for defense.

Each corps had, at the outset, three divisions in line and one in reserve. These were the following, counting from right to left: Third Corps—33d, 80th, and 4th Divisions in line; 3d Division in reserve; Fifth Corps—79th, 37th, and 91st Divisions in line; 32d Division in reserve; First Corps—35th, 28th, and 77th Divisions in line; 92d Division in reserve. Including the organic divisional artillery, each corps had about 600 guns of the divisional types and from 140 to 200 heavy guns and trench mortars. The Air Service was represented by 4 balloon companies and 4 aero squadrons in each corps, except the Third Corps, which had 1 additional squadron. The First Corps had 3 battalions of tanks, light and heavy; the Fifth Corps had 11 battalions; and the Third Corps had none. The army artillery consisted of something over 350 long-range heavy guns of various types, more than a brigade of light guns, and a strong force of anti-aircraft artillery.

The line of corps objectives extended along the Meuse from Forges to Danneroux, thence to Nantillois, Cierges, Epinonville, Charpentry, Montblainville, and finally looped southward through the Argonne and northward again to Binarville, which was to be taken by the French. Each corps was to advance to its objective without regard to the others; when all had arrived, they were to resume the advance, regulating on the center corps, to the American army objective. This followed the Meuse to Brieuilles, then passed along the northern edge of the Bois de Foret to Romagne, Exermont, and Apremont, and through the forest to Binarville.

Meanwhile the French were to make a corresponding advance, bringing their line to face northeast, with the Argonne in a pocket. A combined movement was then to be made, after which the American line was expected to run from the Bois de Foret to the north edge of the woods about Bantheville, then southwest through St. Juvin to the northern tip of the Argonne.

The troops east of the Meuse were to make demonstrations along the entire front, joining in the artillery bombardment and making deep raids into the enemy's lines.

The artillery preparation was to last for five hours, and include neutralization of the heights east of the Meuse, Montfaucon, and the eastern edge of the Argonne. A rolling barrage was to follow along the whole front. Gas was to be used in the preparation, persistent on the heights east of the Meuse, nonpersistent elsewhere. Front-line wire was to be cut by trench mortars and torpedoes. A mixed group, consisting of a detachment from the French 38th Corps and a regiment from the reserve division (92d Division) of the American First Corps, was to maintain connection between the Americans and the French Fourth Army.

Besides the divisions assigned to the corps, there were three in the army reserve—the 1st, 29th, and 82d.

The troops came in from all directions from the British front to Belfort, moving by train, by truck, or by marching, and chiefly at night. The concentration was complete by the 25th. Marching troops were supplied en route from designated railheads; the others carried rations from their last stations.

During the operations, the regulating stations of St. Dizier and Is-sur-Tille were used. At the outset there were nine railheads on and south of the line Verdun—Les Islettes. Later, refilling stations were established on 60-cm. railways, and supplied from railheads.

The operations in the Meuse-Argonne really formed a continuous whole, but they extended over so long a period of continuous fighting that they are considered in three phases: The first, from September 26 to October 3; the second, from October 4 to 31; and the third, from November 1 to 11.¹

On the night of September 25–26 the screen of French troops in the American front was withdrawn and the American divisions definitely took over the line. At 5.30 a. m., on the 26th, the advance began on a front of 33 km. (20.4 miles). Wire had been well cut and troops generally found little difficulty in passing the enemy's front line. By night the Third Corps was on its objective; so also were the left division (77th) of the First Corps, and part of the center division (28th) of the same corps; and the left elements of the 91st Division, Fifth Corps.

The center of the line, however, had failed to break the enemy's position south and west of Montfaucon. This was due in part to the strength of the positions themselves, in part to the cross fire of the artillery in the Argonne and across the Meuse, and in part, doubtless, to the inexperience of many of our staffs and troops, which interfered with full development of power and with mutual cooperation.

On the left, connection with the French was lost. The 368th Infantry, the American part of the connecting group, failed to connect up with the French part; the group was thus disrupted and could not accomplish its mission.

The attack was continued on the next three days. On the 28th the limit objectives were dropped and the corps directed "to advance within their zones of action * * * without regard to objectives." Montfaucon was captured on the 27th, and on the 29th the right of the First Corps advanced as far as Exermont, but was forced to retire. On the night of the 29th the line ran along the Meuse to the Bois de la Cote Lemont, thence by Nantillois to Apremont, south along the edge of the Argonne and west across it to Binarville.

While the plans of the First Army were not fully carried out, yet a very considerable measure of success had been attained, and the sudden strong attack had caused the enemy to weaken other parts of his line by sending reserves to this, the critical section. But our troops had suffered severely, and a defensive line was selected and occupied to permit reorganization for the renewal of the attack.

At this stage of the operations three points in the enemy's lines presented serious tactical problems. These were: (a) Cunel Heights, flanked on the east by the hostile artillery fire from the Meuse, and on the west by fire from the wooded area of Romagne-sous-Montfaucon; (b) the heights of the Bois de Romagne (the wooded area just mentioned), flanked on the

east by fire from Cunel Heights, and on the west from the edge of the Argonne; (c) the east flank of the Argonne, especially in the vicinity of Chatel Chehery and Cornay.

These three localities formed strong, mutually supporting points. In addition, the hostile position extending from the heights of the Bois de Romagne to Fleville prevented infiltration between these heights and the Aire River, and any extended flank attack against Cornay and Chatel Chehery.

In preparation for a new general attack, the 35th, 37th, and 79th Divisions were relieved by the 1st, 32d, and 3d, respectively. The 91st Division was withdrawn to corps reserve. The corps boundary was shifted so as to give to the Third Corps all the Cunel Heights, narrowing the front of the Fifth Corps. The 92d Division was placed at the disposal of the French Thirty-eighth Corps, the right element of the French Fourth Army.

MEDICAL DEPARTMENT ACTIVITIES ^b

The office of the chief surgeon of the army remained at Neufchateau until September 26, when it moved to Ligny-en-Barrois. Its personnel consisted at that time of 13 officers and 19 enlisted men (including 3 hospital sergeants, 3 sergeants, first class, and 5 sergeants) of the Medical Department. Officers' assignments were as follows: Army chief surgeon, medical supply officer and three assistants, sanitary inspector, directors of motor, correspondence and statistical services, representative of the chief surgeon at the front, director and assistant director of the ambulance service, and superintendent of evacuation hospitals.²

DIVISIONAL TRIAGES

Division surgeons were instructed to arrange their field hospitals in such way that one or two of these, as circumstances required, would be placed near the battle line to serve as triages and to receive nontransportable cases, including the gassed and badly shocked. The remaining divisional field hospitals, conveniently located at the rear of these hospitals, received and treated transportable cases.³ Divisional triages were located as follows:

Third Corps: ⁴

33d Division—Glorieux, near Verdun.

80th Division—Fromereville.

4th Division—Sivry-la-Perche.

Fifth Corps: ⁵

79th Division—Les Clairs Chenes.

37th Division—Brabant.

91st Division—Brabant.

First Corps: ⁶

35th Division—Neuvilly.

28th Division—La Croix de Pierre.

77th Division—Florent.

^b In this connection, as will be noted, the arrangements made pertain to the Meuse-Argonne operations as a whole rather than to the first phase.

Triages of the Third and the First Corps were on an average fully twice as far from the front as were those of the Fifth Corps. The distance from the divisional triages to the nearest evacuation hospitals varied from 5 to 12 km. (3.1-7.4 miles). Terrain occupied by the Fifth Corps offered no points directly accessible to the rear in the sector of that corps where evacuation hospitals could be located, for which reason it evacuated obliquely to Varennes, to the southwest; a poor route, but the only one available.⁷ All evacuation points except Vaubecourt and Revigny were within 20 kms. (12.5 miles). Rest stations were established by the Red Cross on evacuation routes, enlisted men of the Medical Department being assigned to assist, and at these stations all patients were given an opportunity to warm themselves, to dry their clothing, to obtain food, and to sleep if they so desired.⁷ Corps hospitals for the reception of patients returnable to duty within a few days were established at suitable points, as nearly as possible midway between the divisional and army hospitals.⁸ Ambulances and busses were assigned to the corps, as indicated below, to evacuate divisional units. This provision of corps hospitals and transport plus divisional, by making an elastic system, capable of great extension without manifest injury to the wounded, met an emergent need, for it was utterly impossible to advance army hospitals *pari passu* with the troops until roads and railways were repaired and motor trucks released for hospital service.⁹

The following named ambulance companies arrived in this area:¹⁰

Souilly, Meuse: Evacuation Ambulance Company No. 1; arrived September 21.

Fontaine Routon: Evacuation Ambulance Company No. 2; arrived September 14.

Froidos, Meuse:

Evacuation Ambulance Company No. 5; arrived September 24.

Evacuation Ambulance Company No. 10; arrived September 23.

Rarecourt, Meuse: Evacuation Ambulance Company No. 11; arrived September 24.

Vaubecourt, Meuse: Evacuation Ambulance Company No. 12; arrived September 23.

Fleury-sur-Aire: Ambulance No. 132; arrived September 22 (personnel only) to serve with American Red Cross Hospital No. 114.

Souilly: Ambulance Company No. 318; arrived September 21.

Villers-Daucourt:

Ambulance Company No. 310; arrived September 21.

Ambulance Company No. 120 (personnel only); arrived September 26.

Fleury-sur-Aire: Ambulance Company No. 42 (personnel only); arrived October 29.

Of these, the following were returned to duty with their divisions:¹⁰ 33d Division, Ambulance Company No. 132, September 30; 78th Division, Ambulance Company No. 310, October 1; 80th Division, Ambulance Company No. 318, October 1.

Ten *Service de Santé* sections, 15 cars each, were loaned us by the French and were assigned to divisional sanitary trains. These were supplemented by 30 sight-seeing busses, with a seating capacity of 30 per car.¹¹ Ambulances of the French *Service de Santé* sections each carried 5 recumbent and 10 sitting patients, while G. M. C. ambulances carried 4 recumbent and 10 sitting patients.¹²

All available vehicles, including those of evacuation ambulance companies detached from evacuation hospitals, trucks, motor cycles with side cars, etc., were pooled for use in corps and army areas.¹¹ This transport pool functioned under an officer who was attached to the office of the army surgeon and who was charged with control of the evacuation ambulance service. In comparison with the size of the army, there was a deficiency of 750 ambulances, a circumstance which, in conjunction with the large number of casualties, subjected the evacuation service to a severe test which was met only by increased effort and protracted hours of labor on the part of the personnel.¹¹

Remedy of the shortage of division and corps ambulances was considered a preferred need, and the army strained every nerve to meet their deficiencies. This was accomplished by temporarily loaning extra ambulance sections to the corps, which in turn assigned them to divisions while they were in action. By this plan, instead of being assigned to a particular division, ambulances were controlled by the army through the corps; and when an emergency arose they were readily shifted to the point of greatest need.¹¹ As an illustration of the inadequate ambulance transportation with which some of the divisions entered the army for this offensive may be mentioned the fact that one division in the First Corps arrived for combat at the last moment with only 4 Ford and 8 G. M. C. ambulances; that is, a total carrying capacity of 44 litter patients. Another division came in with an ambulance carrying capacity of less than 32 patients. Pioneer regiments had no ambulances.¹¹

On the night of September 25 the army and corps had transport for 1,829 recumbent and 1,200 sitting patients, exclusive of divisional ambulances and corps trucks.¹²

Shortage of motor ambulances necessitated the use of returning ration and ammunition trucks to transport slightly wounded and gassed patients.^{11, 5}

The plan of transporting patients by ambulances for the operation was as follows: Wounded, sick, and gassed from battle line to triage and field hospitals by divisional ambulance companies, thence to evacuation and special hospitals by the corps ambulances, the army furnishing extra ambulance companies and 10 sight-seeing busses in addition to those already assigned the corps, and the corps in reciprocity evacuating any army troops in the corps area which required this service; the army to provide for evacuation of special, mobile, gas, and evacuation hospitals.¹³

For the purpose of carrying out the movement of patients, the army territory was divided into seven evacuation areas according to railheads available, viz. Vadelaincourt, Souilly, Froidos, Fleury-sur-Aire, Villers-Daucourt, Vaubecourt, and Revigny.¹³

One United States Army ambulance section was stationed at Fontaine Routon to evacuate the Vadelaincourt area, two at Evacuation Hospital No. 6 to evacuate the Souilly area, one at Evacuation Hospital No. 10 to evacuate the Froidos area, one at Red Cross Hospital No. 114 to evacuate the Fleury-sur-Aire area, one at Red Cross Hospital No. 110 to evacuate the Villers-Daucourt area (this section also established liaison with Revigny), and one section at Troyon-sur-Meuse for the 26th Division, which was with the French Seventeenth Corps.¹⁴

The following disposition of vehicles (other than divisional) was made by the chief surgeon of the First Army:¹⁵

Right flank, Third Corps:

United States Army Ambulance Sections Nos. 560, 571, 599.

French Sanitary Section No. 63—15 ambulances (5 recumbent patients).

French Sanitary Section No. 85—13 ambulances (5 recumbent patients).

10 French sight-seeing busses.

Total, 64 ambulances and 10 sight-seeing busses.

Center, Fifth Corps:

United States Army Ambulance Sections Nos. 542, 602, 603, 604.

French Sanitary Section No. 131—13 ambulances (5 recumbent or 8 sitting patients).

10 French sight-seeing busses.

Total, 61 ambulances and 10 busses.

Left flank, First Corps:

United States Army Ambulance Sections Nos. 520, 570.

United States Army Ambulance Company No. 41.

Evacuation Ambulance Company No. 11.

10 French sight-seeing busses (seating capacity 20 to 30).

Total, 48 ambulances and 10 sight-seeing busses.

Army Reserve:

First echelon, one hour from the line, French Sanitary Sections 5, 89, 145.

Second echelon, two hours from the line, United States Army Ambulance Sections 554, 586, 639, 634, and 30 trucks fitted to carry the slightly wounded (capacity 20 each).

Summary:

Army, 114 ambulances.

Army,^c 12 cars.

Corps, 175 cars and 30 sight-seeing busses.

Army reserve, 99 cars and 30 trucks fitted with seats.

Total, 400 cars and 60 busses and trucks.

The foregoing list does not include the following United States Army Ambulance Sections:¹⁶ 569th, loaned to the 78th Division; 590th, loaned to the

^c Twenty-sixth Division was with the French Seventeenth Corps.

80th Division; 600th, loaned to the 33d Division; Army Ambulance Sections 578 and 611, loaned to the 77th Division; Army Ambulance Sections 593 and 640, loaned to the 91st Division; Army Ambulance Section No. 647, loaned to the 82d Division.

Movement of the Medical Department vehicles into position was not completed until the early morning of September 26. Many of the ambulance companies and seven sections were employed in bringing up nurses, operating teams, and other necessary medical personnel from the Toul and other centers and distributing them to their respective hospitals, and as these were widely scattered this proved to be a time-consuming process.¹⁷ The army ambulances transported 4,307 passengers (other than casualties), with baggage. One ambulance section alone, stationed at Souilly, carried 728 passengers during the period of this operation, September 26 to November 11.¹⁸ The burden was further increased by the excessive amount of baggage carried by many of the medical officers and nurses.¹⁷

In order to conceal from the enemy the intended offensive, it was ordered that no nurses be brought into the area until the last moment, and that those already in the area remain concealed during the day.¹⁷

On September 30, French Sanitary Section No. 50 was attached to the First Corps and No. 84 of the same service was attached to the Fifth Corps. Nine trucks were assigned to the Third Corps. The policy was maintained of attaching an ambulance section from the army reserve for temporary duty only with a corps according to need, thus enabling these reserves to be readily shifted from one corps to another as circumstances required. In order to keep the sections in good working order, those having had hard, active duty were withdrawn for short periods of rest and repair, their places being filled from the reserves.¹²

Evacuation Ambulance Company No. 5 was removed from the First Army on September 30, reducing by 12 the number of first ambulances.¹²

On October 3 five ambulances of French Sanitary Section No. 63 were shelled, one being completely destroyed. On the same day French Sanitary Section No. 84 was subjected to severe machine-gun fire and six of its cars were disabled temporarily.¹⁹

During the early part of this operation it was impossible through lack of reports to maintain an accurate check on the activities of the army ambulance companies, but later the daily reports of these organizations became satisfactory and provided a more accurate index of work accomplished.¹⁸ These daily reports did not tell the whole story, however, for figures were not furnished to cover all patients transported. As a result, the total number of cases which they reported they carried does not correspond with the actual number of sick and wounded transported during these operations. Their reports, did not include those of (1) divisional ambulances, which frequently worked in corps and army areas, (2) army ambulance companies (with dressing station personnel) assigned to corps sanitary trains, and (3) a part of the

ambulances working behind the French Seventeenth Corps and the French Second Colonial Corps.¹⁸

Passengers carried, other than casualties, were for the most part individual medical personnel and surgical teams changing stations.¹⁸

During the operation the United States Army Ambulance Service sections transported individual medical personnel, teams, and baggage, furnished a supply truck service for the army hospitals, and maintained a courier service for liaison purposes. Their trucks also assisted in moving army hospitals. Many of the evacuation hospitals came into the zone of the army with truck transportation entirely inadequate for the work it was called upon to do. Most of the recently arrived units had no trucks, and the combined gas hospitals could muster but one of these vehicles. This condition, however, was improved later. In order to meet this serious situation the United States Army Ambulance Service sections pooled their trucks and redistributed those of the evacuation hospitals. In this way such transportation was made as mobile as possible and the army ambulance service was able to provide truck service for gas, neurologic, contagious, and certain evacuation hospitals, supplying them with food, clothing, wood, the needed quartermaster supplies, and, in addition, to carry the water supply of two hospitals. So far as it was possible to do so, this service was run on a definite schedule.²⁰

On several occasions, because of the shortage of medical personnel, ambulance personnel was withdrawn temporarily from the transport service to relieve overworked and undermanned gas hospitals. The following ambulance companies were employed in the army hospitals until called for by their respective divisions: Nos. 41, 108, 110, 120, 310, and 318.²¹

Ambulance service was successfully maintained under the most trying conditions, and this was largely due to the splendid work of ambulance mechanics and the hearty cooperation of the Motor Transport Corps. For this operation the latter established a forward auto repair and supply depot at Ferme Longues-Roies, on the Triaucourt—Souilly road, 2 km. (1.2 miles) east of Triaucourt. This depot was well placed, ably administered, and proved to be a potent factor in the maintenance of the G. M. C. ambulances.²² For French ambulances the main supply and repair depot was at Parc Bailly, Bar-le-Duc; while overhauling and minor repairs were made at Parc Fretty, 2 km. (1.2 miles) from Souilly. The echelon American Parc C, Haute Jure, 4 km. (2.4 miles) south of Bar-le-Duc, supplied spare parts, tubes, tires, etc., for the Ford ambulance sections of the French Service de Santé. Later a motor transport park at Sampigny was used for more extensive repair work.²² Maintenance of the ambulance road service, save for ordinary wear and tear and minor repairs, was extremely good. Five of the ambulance sections went through the entire operation without laying up a single car. The daily average for effective G. M. C. ambulances during the Meuse-Argonne operation was 11.25 cars per section of 12, which of itself speaks for the energy of commanding officers and for the spirit and skill of drivers and mechanics. The record

for Ford cars was not satisfactory, owing in part to the fact that these cars were used on bad roads, where in fact the rough terrain made the use of the heavier cars difficult; yet this did not altogether account for the difference in their ability to meet service requirements.²³

Owing to the acute shortage of ambulances, some patients were evacuated by the 1-m. and 60-cm. railways, their lines being convenient for the purpose. On the first-mentioned line, which traversed the entire zone south of No Man's Land, three trains were operated, each with a personnel of 1 officer and 12 enlisted men from Evacuation Hospitals No. 6 and No. 7. These trains carried 1,120 patients from Souilly to Base Hospital No. 83, at Revigny.²⁴

When it was possible to do so, evacuations by the army and the divisions were made over the 60-cm. railway.

In the forward areas on these railways litters were simply placed on racks fitted on flat cars, a method which proved very satisfactory. An attempt was made to operate a train of box cars each specially fitted with conveniences, e. g., an oil stove and a marmite for hot coffee or other liquids; but the high center of gravity and the poor roadbed caused such frequent derailments that this attempt was discontinued.²⁵ Each train was manned by 1 medical officer and 5 enlisted men and ran on a regular schedule. During the period November 1-5 all trains were preempted for the movement of rations and munitions.²⁵

Two routes were employed for the 60-cm. line: (1) Fromereville to the Souilly railhead. This line was well ballasted and in good condition. Eight trips were made and 510 patients removed, the average time per trip being about three hours. (2) Montzeville terminal to Souilly railhead, the line passing over the Verdun battle field. Here the road was rough and ballasting poor, so that after two trips, when 145 patients had been carried, the service was discontinued because of derailments.²⁵

Increased hospitals for the operation being necessary, the commanding general of the French Second Army turned over the following for use of the American forces, in addition to those which had been similarly transferred for the St. Mihiel operation:²

French evacuation hospitals at Villers-Daucourt, Brizeaux-Forestieres, Revigny, Froidos, Fleury-sur-Aire; gas hospital, Julvecourt; neurological hospital, Nubecourt; fracture hospital, Deuxnouds-devant-Beauzee; hospital locations at Verrieres, Chateau de Salvange, La Grange-aux-Bois, Les Placys, Les Clairs Chenes, Fontaine de Routon, and a large triage at Glorieux, near Verdun.²⁶

To insure sufficient bed space for the casualties expected, additional evacuation, mobile, and other hospitals were transferred to the area, while still others were provided from local resources. These hospitals were located as follows, but certain of them did not arrive during the first phase of the operation and certain others were moved from one point to another, as indicated below:¹⁰

Evacuation Hospital No. 3:	Arrived—	Mobile Hospital No. 1:	Arrived—
Fleury-sur-Aire, Meuse-----	Sept. 21	Les Clairs Chenes, Meuse-----	Sept. 24
French Army (Mont Frenet, Marne) -----	Oct. 2	Fromereville, Meuse-----	Oct. 9
Fontaine de Routon, Meuse---	Nov. 10	Esnes, Meuse-----	Oct. 27
Evacuation Hospital No. 4:		Bethenville, Meuse-----	Nov. 12
Fontaine de Routon-----	Sept. 14	Mobile Hospital No. 2:	
Fromereville, Meuse-----	Oct. 29	Château de Salvange, Meuse--	Sept. 24
Evacuation Hospital No. 5:		Mobile Hospital No. 4:	
Ville-sur-Cousances, Meuse---	Sept. 16	Villers-Daucourt, Marne -----	Sept. 18
French Army (La Veuve, Marne)	Oct. 3	La Grange-aux-Bois, Marne---	Sept. 29
Staden, Belgium-----	Oct. 24	Cheppy, Meuse-----	Oct. 27
Evacuation Hospital No. 10:		Mobile Hospital No. 5:	
Froidos, Meuse-----	Sept. 21	Les Placys, Meuse-----	Sept. 24
Evacuation Hospital No. 11:		Mobile Hospital No. 6:	
Brizeaux Forestieres, Meuse--	Do.	Deuxnouds-devant-B e a u z e e , Meuse-----	Sept. 29
Evacuation Hospital No. 14:		Varennnes, Meuse -----	Oct. 17
Villers-Daucourt, Marne-----	Do.	Mobile Hospital No. 8:	
Les Islettes, Meuse-----	Oct. 7	Deuxnouds-devant-B e a u z e e , Meuse-----	Oct. 15
Varennnes, Meuse-----	Nov. 6	Exermont, Ardennes-----	Nov. 3
Evacuation Hospital No. 15:		Neurologic Hospital No. 3:	
Revigny, Meuse -----	Sept. 21	Nubecourt, Meuse-----	Sept. 20
Glorieux, Meuse-----	Oct. 13	Field Hospital No. 41:	
Evacuation Hospital No. 16:		Villers-Daucourt, Marne-----	Sept. 21
Revigny, Meuse -----	Oct. 15	Varennnes, Meuse-----	Nov. 4
Army Red Cross Hospital No. 110:			
Villers-Daucourt, Marne -----	Sept. 24		
Army Red Cross Hospital No. 114:			
Fleury-sur-Aire, Meuse -----	Sept. 18		

Army hospitalization as it existed in the Meuse-Argonne region on September 26 was as follows:²⁷

Evacuation Hospital—

- No. 3, Fleury-sur-Aire (in reserve).
- No. 4, Fontaine de Routon (for seriously wounded).
- No. 5, Ville-sur-Cousances (in reserve).
- No. 6, Souilly (for seriously wounded).
- No. 7, Souilly (for seriously wounded).
- No. 8, Petit Maujouy (for seriously wounded).
- No. 9, Vaubecourt (for seriously wounded).
- No. 10, Froidos (for seriously wounded).
- No. 11, Frizeaux-Forestieres (seriously and slightly wounded).
- No. 14, Villers-Daucourt (seriously and slightly wounded).
- No. 15, Revigny (sick patients).

American Red Cross Hospital—

- No. 110, Villers-Daucourt (seriously and slightly wounded).
- No. 114, Fleury-sur-Aire (seriously and slightly wounded).

Mobile Hospital—

- No. 1, Les Clairs Chenes, near Blercourt (nontransportables).
- No. 2, Chateau de Salvange (nontransportables).

No. 4, Le Grange-aux-Bois (nontransportables).

No. 5, Les Placys (nontransportables).

No. 6, Deuxnouds-devant-Beauzee (for head and facial injuries).

Base Hospital No. 83, Revigny (sick).

Army Field Hospital No. 41, Villers-Daucourt (for gassed cases).

Neurologic Unit—

No. 1, Benoite Vaux.

No. 3, Nubecourt.

Gas hospitals:

Rambluzin, Gas Hospital No. 1, operated by Ambulance Company No. 108, with mixed personnel, including some from Evacuation Hospital No. 10.

Julvecourt, Gas Hospital No. 2.

Verrieres, Gas Hospital No. 3, operated by Ambulance Company No. 108.

Rarecourt, Gas Hospital No. 4, operated by Ambulance Company No. 108.

Infectious diseases and gassed:

La Morlette, annex to Evacuation Hospital No. 8.

Infectious diseases:

Verrieres, Infectious Hospital No. 1, mixed personnel.

Benoite Vaux, Infectious Hospital No. 2, French.

Between October 1 and 27 the personnel of Evacuation Hospitals Nos. 20, 21, 22, and 23 arrived and was distributed among the other hospitals, which were being taxed to their utmost.²⁸

Personnel of Base Hospital No. 83 arrived on September 20 and was assigned to other hospitals. Later it cared for the sick at Revigny, but did not function as an independent unit until November 14.²⁹

All the units above mentioned taken together afforded a front hospitalization of 18,000 beds. This was far too small for the forces engaged, but it represented the full resources of the Medical Department then available for the purpose; for the Medical Department was still experiencing critical shortages in equipment, personnel, hospitalization, and ambulances.

Evacuation Hospitals Nos. 1, 2, 12, and 13 and Mobile Hospitals No. 3 and No. 39 remained in the Toul sector to serve the Fourth Corps and the newly formed Sixth Corps.³⁰ They were detached, however, from the First Army and assigned to the Second when this was organized, October 12.³¹ Evacuation Hospitals No. 3 and No. 5 were transferred, their ambulances accompanying them, on October 1 from the area to Mont Frenet and La Veuve, respectively, to serve the 2d and 36th Divisions, which had been detached from the First Army for service with the French Fourth Army in the Champagne sector. Mobile Hospital No. 7 from Paris went also to Mont Frenet.³²

The character of the terrain in No Man's Land and the effect of artillery fire upon the few roads necessitated the retention of these army hospitals at the points indicated, despite the advance of troops, until repair of roads and railways had reduced traffic congestion. In prevision of this condition, mobile

hospitals were placed as far forward as possible, as already indicated, in order to receive the seriously wounded. The army hospitals were placed as near as possible to railway sidings and were expanded to their fullest capacity.⁸

Assignments were made to the several corps of hospitals for severely wounded, slightly wounded, gassed, and sick according to corps evacuation lines. Each corps was given an equal number of these units, with the exception of the French Seventeenth Corps, which was to be a holding force at first, its sick and wounded to be cared for in French hospitals already in existence.³³

The First and Fifth Corps had contagious diseases hospitals each run as an annex of the nearest evacuation hospital and operated by its personnel. The Third Corps was served in this particular by a preexisting French unit at Benoitte Vaux.³³

The only attempt at surgical specialization by way of a special hospital was the use of Mobile Hospital No. 6, at Deuxnouds-devant-Beauzee, for cranial and facial injuries; these cases sustained transportations well before operation but badly subsequent to it. Though this unit performed excellent service, it was found that this method of specialization—a relic of trench warfare—was unsound. Specialization was actually accomplished by assigning operating teams trained in head surgery to each mobile and advance evacuation hospital.⁹

Food stations were established at the receiving wards and on loading platforms of the evacuation hospitals, and hot drinks were served to patients as they entered and departed from the hospital.⁷

EVACUATION CENTERS

In order to clear evacuation and special hospitals which were not on railroads, and to facilitate the making up of full trainloads of cases of the same kind, it was found advisable to collect cases from these hospitals into hospitals located on the railroad. Thus were created the evacuation centers. At each of these centers a representative of the evacuation office of G-4 of the army was stationed to effect evacuation of the group of hospitals in the particular area. These officers had preferred telephone wires to the regulating station at St. Dizier. An evacuation center was established at Souilly for the Souilly, Vaubecourt, Revigny, and Vadelaincourt groups, to serve the right or Third Corps front, and another at Fleury for the Fleury, Froidos, Villers-Daucourt, and Varennes groups, to serve the center and left or Fifth and First Corps front.³⁴ The hospitals at Souilly, Fleury, Froidos, Villers-Daucourt, and Varennes were provided with loading platforms accommodating entire hospital trains.³⁴

Evacuations by ambulance were necessary to empty into the evacuation centers the hospitals not having railway facilities. An effort was made to prevent the accumulation of more patients in the nonrailway hospitals than could be cared for by the operating teams on duty. If greater accumulation occurred, some of the patients were transferred and evacuated on preoperative trains.³⁴

As a rule mobile hospitals were located in advance of evacuation hospitals, to care for the seriously wounded or nontransportable cases. At other times they were used to reinforce the operating departments of evacuation hospitals. Their evacuation was usually made by ambulance to the evacuation hospitals.³⁴

If the line advanced, the hospitals which were located off the railroad were sent forward, either complete or as tent sections, the more permanent railhead hospitals remaining in place to care in part for evacuations from hospitals in advance of them.³⁴

EVACUATION AREAS

As stated above, in the consideration of the First Army ambulance service, evacuation areas for that army were designated. In determining these areas the following facts were taken into consideration: The railhead facilities, the character of casualties which the hospitals within the area would receive, the number of trains per day assigned to hospitals in the area, and, finally, the practicability of routes of evacuation from outlying hospitals to the railhead.³⁵

The Vadelaincourt area (1,110 beds) evacuated by Evacuation Ambulance Company No. 2, stationed at Fontaine de Routon, included the following hospitals:³⁵

	Beds
Mobile Hospital No. 1 at Les Clairs Chenes.....	250
Mobile Hospital No. 5 at Les Placys.....	250
Evacuation Hospital No. 4 at Fontaine de Routon.....	600

The Souilly area (4,130 beds), evacuated by United States Army Ambulance Sections No. 521 and No. 530, stationed at Souilly, included the following hospitals:³⁶

	Beds
Evacuation Hospitals Nos. 6 and 7, Souilly.....	2,400
Gas hospital at La Morlette.....	450
Gas hospital at Rambluzin.....	280
Evacuation Hospital No. 8, Petit Maujouy.....	1,000

The Froidos area (1,340 beds), evacuated by Evacuation Ambulance Company No. 10, stationed at Froidos, included the following hospitals:

	Beds
Evacuation Hospital No. 10 at Froidos.....	440
Mobile Hospital No. 2 at Chateau de Salvange.....	250
Gas Hospital No. 2 at Julvecourt.....	300
Gas Hospital No. 4 at Rarecourt.....	350

The Fleury-sur-Aire area (2,050 beds), evacuated by Evacuation Ambulance Company No. 8, stationed at Fleury, included the following hospitals:³⁶

	Beds
Army Red Cross Hospital No. 114 at Fleury-sur-Aire.....	1,200
Evacuation Hospital No. 11 at Brizeaux-Forestieres.....	600
Camp Raton.....	250

The Villers-Daucourt area (2,180 beds) was evacuated by United States Army Ambulance Section No. 601, stationed at Army Red Cross Hospital

No. 110, which also established liaison with Revigny. The area included the following hospitals:³⁶

	Beds
Army Red Cross Hospital No. 110 at Villers-Daucourt.....	1,620
Contagious hospital at Verrieres.....	310
Mobile Hospital No. 4 at La Grange-aux-Bois.....	250

The Vaubecourt area (3,060 beds), evacuated by Evacuation Ambulance Company No. 12, stationed at Evacuation Hospital No. 9, included the following hospitals:¹⁶

	Beds
Evacuation Hospital No. 9, at Vaubecourt.....	2,000
Neurological Hospital No. 3, at Nubecourt.....	210
Mobile Hospital No. 6, at Deuxnouds.....	250
French Contagious Hospital, at Benoite Vaux.....	300
Neurologic Hospital No. 1, at Benoite Vaux.....	300

The Revigny area (1,670 beds) included following hospitals:¹⁶ Base Hospital No. 83, functioning with Evacuation Hospital No. 15, at Revigny. (Two ambulances from Evacuation Ambulance Company No. 12, to maintain liaison between Vaubecourt and Revigny.)

Evacuation Ambulance Co. No. 6 was stationed at Troyon-sur-Meuse to provide additional evacuation for the 26th Division, which was with the French Seventeenth Corps.¹⁶

Until roads and railroads were repaired and motor trains freed from the incessant transportation of ammunition, it was utterly impossible to advance an evacuation hospital beyond No Man's Land. It was believed that unless possessed of a multitude of motor ambulances—which the First Army lacked—an evacuation hospital would prove useless unless located near a railroad with loading facilities, and in spite of opposing arguments this theory was adhered to rigidly. Otherwise, these units would speedily have become congested and, having no outlet, the result would have been a backing up into corps and divisional hospitals successively.⁹

During trench warfare it had been noted that the demand for rapid transport of wounded and shocked cases to a point where definitive treatment could be given had been responsible for many unnecessary deaths, the shock of operation being added to that of trauma and exhaustion incident to rapid transport. The army surgeon's office was insistent that this procedure should not be permitted, and divisional and corps units were directed to be prepared for shock treatment and for the proper care of all cases before they were operated or evacuated. When this system had been developed, it was observed that many cases which otherwise would have died were received at evacuation hospitals in astonishingly good condition, though some of them, on account of terrible road and traffic conditions, had been three days en route.⁹

The sudden incidence of influenza, with pneumonia as a complication, threatened completely to disrupt the evacuation system, and it was necessary to triage cases of this disease as carefully as those suffering from battle casualties. This epidemic was much more prevalent during the second phase of this operation than during the first or third phases.⁹

SUPPLY DUMPS

Large, well-stocked medical supply dumps were established at Vaubecourt, Varennes, and Fleury, while that previously established at Souilly was enlarged.³³ Later, a dump was established at Les Islettes and a supply unit was proposed at Verdun.³⁷

CORPS REGULATING OFFICER

It was necessary for the surgeon of each corps to maintain close liaison on the one side with his divisional hospitals and on the other side with the evacuation hospitals draining them in order that they might work together. In each corps, therefore, a corps regulating officer was designated to represent the corps surgeon in this important duty. In order to expedite action, the regulating officers were stationed at places having direct trunk-line telephone communication with the chief surgeon of the army. In the First Corps the officer so selected was the commanding officer of the corps sanitary train; while in the others, other officers were designated for this service.³⁸ An officer of the corps sanitary train detailed to assist the corps regulating officer was placed on duty with each divisional triage and kept his chief informed concerning the number and kind of patients requiring evacuation. As the corps regulating officer was also kept constantly informed by the army evacuation officer of the number of vacancies in army hospitals and was furnished other data concerning them, he was enabled not only to determine which divisional hospitals were in greatest need of evacuation but to route corps ambulances from them to the evacuation hospitals best prepared at the moment to receive patients. This routing was changed as occasion required by traffic signs, couriers, and military police. Routing was by no means an easy task, for it was influenced not only by the location and bed capacity of the army hospitals concerned but also by changing traffic conditions.³⁸ These in fact necessitated certain departures from the general plan.

The evacuation problem of the Third Corps differed from that of the First and Fifth. In the rear of the Third Corps area, army hospitals were more scattered and presented more possibilities of readjustment and shifting of the wounded than did those of the First and Fifth Corps.³⁹

In the Third Corps the corps surgeon was made responsible for evacuation from divisional triages and field hospitals, the army assuming a coordinating control. The army furnished the corps surgeon with information regarding the number of empty beds in the different hospitals, the corps surgeon in turn furnishing estimates of the probable number of wounded. These reports were not limited to daily returns, but were furnished by courier and by telephone as often as circumstances demanded.³⁹

The problems of the First and Fifth Corps were very similar. The principal army hospitals serving these two corps were grouped about two main highways, the Clermont—Froidos—Fleury road and the Ste. Menehould—Villers—Daucourt road. The former was the more active and congested. For the first 10 days of this operation it was possible for the corps to shift ambulances to the desired hospitals by placing directing officers in control of

roads. Then as the advance progressed, the control problem was simplified and a single control post was established on the Grandpre—St. Juvin—Varennés—Clermont road, a short distance above Varennés and close to the Third and Fifth Corps rest and relay stations. At this time practically all wounded of these corps were coming down this road, and a mutual arrangement was made for the purpose of avoiding duplication of personnel. The First Corps assumed control of this control post, the army keeping the ambulance director of the First Corps informed concerning the bed capacity of evacuation hospitals. At this post a large, illuminated box showed, through removable lettered sheets inserted in its front, to which hospital ambulances should carry each class of cases. This post was under control of the commanding officer of the corps sanitary train, who maintained liaison, by the use of motor cycles, with the director of corps ambulances.³⁹

The designation of certain army hospitals to receive the wounded from the individual corps facilitated evacuation, but it was sometimes necessary to make a rapid readjustment in this respect in order to meet exigencies of the moment.³⁹

MEDICAL REPRESENTATIVES, GENERAL STAFF

A representative of the medical department section of the fourth section of the general staff remained at headquarters of the First Army, at Souilly, for the purpose of coordinating Medical Department activities of the general staff, A. E. F., with those of the army. Other representatives of that section were also frequently at the front.⁴⁰

EVACUATION OFFICER

Regulation of the flow of casualties into evacuation and mobile hospitals was directed in detail by an assistant of the army surgeon who was designated as evacuation officer. He also was stationed at Souilly, and under direction of the chief surgeon of the army directed army ambulances and supervised and coordinated the evacuation of casualties by hospital train. In order to promote coordination he was attached to the office of G-4 of the army—not to G-4, General Headquarters, A. E. F. He received twice daily the casualty reports of division, corps, and army troops and the classified reports of hospitals in the army zone, which gave the number of empty beds and the number of cases in the following categories: Sick, wounded, gassed, and evacuable. The last named were further classified as sitting, prone, pre-operative, and postoperative.⁴¹ The hospitals in the army zone also reported, at first twice daily, and later every four hours, whether patients were or were not coming in rapidly, whether they could or could not care for patients coming in, and whether they would or would not have to be evacuated within the next few hours. In times of greatest activity even more frequent reports were made by the evacuation hospitals concerning vacant beds and the number of operating teams, in order that the flow of casualties from the various corps might be changed accordingly. In this service the hospitalization officer

acted as a representative of the evacuation officer in liaison with the corps and the various hospitals.⁴¹

Train evacuations during the first phase of this offensive from the several evacuation points of the First Army (including Toul, which served troops to the east of the Meuse-Argonne sector) are shown in Chapter XIX.

COURIER SERVICE

The Souilly office of the chief surgeon, First Army, had established courier service with evacuation hospitals, mobile hospitals, contagious and gas hospitals of the army area on September 5, 1918. At that time one route was sufficient and motor cycles were then supplied by Sections 521 and 530, United States Army Ambulance Service. During the preparations for the Meuse-Argonne operation it became necessary to establish three routes for official mail and one additional route for special reports which were submitted by hospitals of the western half of the area to the assistant director of ambulance service. Until the corps headquarters moved north of the Clermont—Verdun road, couriers visited also the First, Third, and Fifth Corps headquarters. After corps headquarters moved north, corps mail was sent through the First Army message center.⁴²

To keep four motor cycles actually on the road it was necessary, because of traffic and road conditions, to have eight on duty. Four of these machines reported from Toul and the other four belonged to ambulance companies. Sections 521 and 530, United States Army Ambulance Service, had three machines on duty at all times, and Sections 520, 570, 599, and 603, United States Army Ambulance Service, had machines on duty for variable periods.⁴³

Couriers called at the message center, Souilly, three times a day, and mail was left there for the trunk line of the army courier service. Couriers from the evacuating office took all Medical Department mail for units of the army and corps, thereby relieving the message center of that work. Not only was mail from the office of the chief surgeon, First Army, taken care of, but also all mail addressed to hospitals was cared for by the couriers of the evacuation office of the army.⁴³

Courier routes averaged 60 km. (37.2 miles) in length. During September each hospital was visited twice daily by courier. Then because of traffic conditions it became impossible to make two trips in the daytime, and thereafter each hospital was visited once a day. The total distance traveled by courier from the army evacuation office was approximately 14,160 km. (8,793 miles) between September 5 and November 11, 1918.⁴³

SURGICAL REPORTS

In order that both the surgical and the evacuation services might be better controlled, efficiency reports from surgical hospitals, surgical directors, and operating teams were required by the army surgeon. Daily reports of surgical activities were also sent by the director of surgery in each hospital to the army consultant in surgery.⁴⁴ These reports called for the number of amputa-

tions, the deaths without operation and subsequent to it, and the number of cases, as follows: Gas gangrene at time of operation, fractures admitted without splinting or improperly splinted, tourniquets applied, wounds which had not been operated in 24 hours. In addition, patients improperly treated before arrival were specifically reported. It was required that the name, number, regiment, field hospital, and name signed to the field card of every case be made of record in order that the surgical consultant should receive detailed information, and this especially concerning this last class of patients.

An excessive number of amputations indicated faulty triage, delayed⁴⁵ transportation, abuse of the tourniquet, undue surgical zeal, or they might be due to uncontrollable conditions. An excessive number of deaths before operation at a receiving hospital indicated faulty and unwarranted forwarding of nontransportable cases. From the number of gas gangrene cases at the time of operation, it was possible to discover if there had been defects in transportation and needless detention of patients in the advance areas. From the number of improperly splinted or unsplinted cases could be measured the efficiency of the division orthopedist and the degree of cooperation given him by the division surgeon; cooperation between these officers was reflected in the care which fracture cases received. By the number of cases received whose wounds were of more than 24 hours duration could be checked delays in transportation and unnecessary retention of patients in field hospitals.⁴⁶

Under the caption "Cases improperly treated before arrival," the surgical directors could give much valuable information concerning the bad condition in which patients were received. This information in turn was passed on up through corps surgeons to the divisions. A consultant's daybook was kept in the office of the army surgical consultant and consultants entered in this the work done by them and each of the results accomplished. Investigations assigned to consultants were entered on one page of the book in question and on the opposite page the action taken and results obtained.⁴⁷

Reports showed considerable differences between the various divisions in the length of time elapsing after a patient was wounded and his arrival at an army hospital. Experience showed that the best results in reducing infection and in saving life were in those divisions which, in spite of all difficulties, managed to get their wounded to the rear in good time. The marked difference between divisions was due to a tendency in certain divisions to hold cases for operation. Road conditions alone did not account for the marked discrepancy between divisions. Certain divisions, from the moment they entered the army area until they left it, managed to get their wounded promptly to the rear, some of them making especially fine records.⁴⁸

The following pertains to the activities of the Medical Department during the first four days of the Meuse-Argonne operations:⁴⁹

* * * * *

Sanitary troops.—In general the services of attached sanitary troops were satisfactory, except as affected by deficiency in numbers and difficulty and delay in bringing up the battalion combat equipment, due to the broken terrain and roads and improper transportation. Mistaken zeal was shown in some cases by making long-distance evacuation

of single patients by litter when the majority of patients would have fared better if the battalion litter bearers had been used for the collection of the many patients in groups, to be cared for by the ambulance company personnel on its arrival, and later evacuated by wheel transport. Dressings were generally well applied, but complaint was heard of damage done by unnecessary use of the tourniquet. Medical Department soldiers were not greatly used as litter bearers in the advanced positions. Combat troops or infantry litter bearers were doing much carrying, which fact, with other less legitimate depletion, took many rifles from the firing line. In one case, eight riflemen were noticed accompanying one wounded man to the rear. The provisions of the regulations prohibiting combat troops taking wounded to the rear should be rigidly enforced. Supplies were generally adequate in the advance positions owing to the small ratio of casualties on the first day.

Ambulance and dressing stations or triages.—In these open operations the establishment of a general dressing station for the entire divisional zone was the rule. Here patients were collected, dressed, sorted, and evacuated as road conditions permitted. As these establishments were necessarily large, they required much shelter and cover. As there was usually only one to the division, stations were considerable distances from battalion and regimental collecting points or aid stations. They were frequently established on congested roads (always targets for artillery fire) and consequently were unnecessarily exposed to fire and caused long carriage of patients to them. In open operations, difficult terrain and bad or congested roads will be the rule, and consequently evacuation from the dressing station by ambulance will be difficult and slow. The measures to be taken to secure best care of the wounded are to move up at least two or three dressing stations by pack mule, or by bearer detachment carriage, and distribute them over the divisional zone in such a manner as to secure cover on lines of covered evacuation from the front, away from shell-threatened villages and crossroads and near the collecting points of wounded of the brigades or regiments they are to cover. Here the casualties can be collected, dressed, and cared for until the roads are repaired and ammunition train congestion has ceased. Such action will secure early clearing of the field and collection, and the best possible care of cases until evacuation can be accomplished. Here primary sorting can be done, and if necessary a secondary triage can be done at an establishment located farther to the rear on a route of sanitary evacuation. While such procedure does not bring the patient to the evacuation hospital sooner, it does permit early clearing of the field, collection, dressing and antitetanic prophylaxis, feeding, warming, shelter and care, and relief of the attached sanitary troops for further duty with their organizations, and maintains the patient in better condition for his evacuation trip.

The dressing stations, particularly those under canvas, worked efficiently in general after patients had been received. Those established in dugouts, cellars, or buildings were cramped for room, and in many cases had not cleared out obstacles and debris sufficiently to permit economy of effort.

Ambulance detachments.—Work excellent, in so far as spirit, interest, care, and driving were concerned. Evacuation was much delayed in forward areas by destroyed roads and jams.

Field hospitals.—Owing to the existence of fixed hospitals in rear areas, evacuation was made from the triage direct to hospitals designated for special types of cases, and the field hospitals were used in some cases to equip and man the triage, for slight cases, or held in reserve.

Corps and army sanitary troops and establishments.—Generally held in reserve for future use, a correct procedure, or were designated for special types of cases.

Evacuation.—Except as limited by road conditions, evacuation satisfactory. Cases arriving at evacuation and surgical hospitals were held, cared for, and cleared in a satisfactory manner in accordance with a well-ordered scheme. Some of the fixed establishments were at considerable distances owing to the necessity of using buildings built by the French for the sanitary service of intrenched positions. Several of these units had not completed establishment until late owing to the fact, as stated, that sufficient trans-

portation was not furnished for rapid movement of equipment and because of the prohibition of erection of tentage at night before H hour.

Military police.—Military police were not noted at the sanitary establishments to the rear. It is necessary to have at least a small squad of military police at triages and evacuation and surgical hospitals in order to hold slightly wounded, malingerers, and skulkers, able to return to their command, who are evacuated or wandering to these establishments.

Salvage.—Owing to transportation difficulties and the absence of salvage troops, considerable amounts of ordnance material brought in with patients collected at dressing stations and hospitals. If properly cleaned and cared for at once this material would be immediately available for reissue. The sanitary troops by themselves are insufficient to care for this material, and to put it under shelter makes considerable demands on the cover which should be reserved for personnel. It is deemed advisable to assign one enlisted man of the ordnance or salvage department to each ambulance company, field hospital, evacuation hospital, and mobile surgical unit or hospital for the care and preservation of salvaged property.

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- (47) Ibid., 41.
- (48) Ibid., 64.
- (49) Notes on Recent Operations No. 3, (Confidential Document No. 1376, G-5, G. H. Q., A. E. F.), October 12, 1918. On file, Historical Division, S. G. O.

CHAPTER XXI

FIRST PHASE—Continued

THE FIRST CORPS (77TH, 28TH, AND 35TH DIVISIONS IN LINE; 1ST AND 92D DIVISIONS IN RESERVE)

On September 18, 1918, the First Corps, being relieved by the Fourth Corps in the St. Mihiel salient, moved its headquarters to Rarecourt, leaving behind the division which had been under its control, and established itself there the same day, at 6 p. m.¹

On September 21, at 8 a. m., the commanding general assumed command of the corps sector from Vauquois to La Harazee, into which were moving the 77th, 28th, and 35th Divisions (all less divisional artillery).¹

The corps was under the tactical control of the French Second Army until noon, September 22, when the American First Army assumed control of the sector.¹ The First Corps plan of communications, evacuation, and supply, was promulgated in Field Orders No. 57, September 22, pertinent extracts of which read as follows:

HEADQUARTERS FIRST ARMY CORPS,
AMERICAN E. F.,
22 September, 1918.

Field Orders

No. 57.

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ANNEX 9

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2. Roads.

(a) Corps axial road:

Rarecourt — Clermont — Neuville — Varennes — Baulny — Fleville — St. Juvin — Grandpre — Briquenay — Germont.

(b) Division roads:

35th Division and corps troops—

Froidos — Clermont — Neuville — Varennes — Baulny — Fleville — St. Juvin — Verpel — Thenorgues — Buzancy.

28th Division—

Les Islettes — Bois Bachme — thence north and northwest thru the Foret d'Argonne via la Crois de Pierre — thence thru the Bois d'Apremont and the Bois de Chatel to Chatel — thence north and northwest thru Marcq and Chevieres to Grandpre — thence north to Briquenay and Germont.

77th Division—

Les Islettes — le Neuvour — le Claon — la Chalade — le Four de Paris — thence northeast thru the Foret d'Argonne to where it joins the 28th Division road — thence on that road to Germont.

(c) The corps axial road follows the route which the army intends to make a route gardee. At present the route gardee extends to the outskirts of Clermont. As the advance progresses forward, sections of the crops axial road will be added to the

route gardee. Before such sections can be added they must be put in shape to stand the heavy traffic. To accomplish this purpose, sections of the road will be completely closed for engineer road work. The closing of a section will be announced as far in advance as possible by G-1, First Army Corps, but in case of doubt or the lack of information the C. R. A. will have an American representative (Captain Cross) with telephonic communication at Clermont, who is charged with dissemination of information concerning the route gardee. When closed, no traffic whatsoever will be allowed on the closed portion. All traffic must therefore pass on the roads to the right and left. Roads to the *east* are nearly all one way going *north*, while those to the *west* are nearly all one-way roads going *south*. If this information is well spread there should be the minimum of confusion and congestion.

(d) *The route gardee will be closed between Neuville and Varennes (by order of the 1st Army) commencing at H plus 24 hours.*

(e) Division engineers should see that all roads in their respective sectors are made passable for troops, light artillery, and ammunition. The corps engineers follows up and improves the roads for the transportaton of heavy artillery and supplies. The army engineer follows and puts roads in shape for all traffic.

It is imperative that road troops be impressed with their responsibility in opening and repairing roads. Ammunition and supplies must be pushed to the front with the greatest possible rapidity, and engineers who work with a will and an understanding of their responsibilities can speed up the entire operation by more active road work. Division engineers should also send out competent officers to locate new routes within their areas with a view to relieving traffic on congested roads. Not only should the main highways be repaired, but all roads should be opened up and used.

Every effort will be made by all concerned to construct and connect roads across No Man's Land at the earliest practicable time, and each division should assure itself at least one circuit (front and rear) within its own sector, if possible.

(f) Corps and army troops will use such divisional roads as may be necessary.

(g) Army artillery and tanks will not be permitted to block the roads and thereby cause traffic congestion. For such traffic the army artillery and tanks should arrange their routes and time of march within the corps sector with G-1 of the corps.

(h) Ammunition must be given priority and must not be delayed by food supplies. Each man in the front line has two days' reserve rations, but he can not carry two days' ammunition. Provost marshals will therefore park food supply and baggage columns to allow ammunition to pass. Such parks must be *off* the road. No baggage except the *minimum* will be allowed hauled to the fighting troops until the operation has been completed. The hauling of surplus and unnecessary baggage kills more animals and causes more breakdowns and traffic blocks than all the ammunition hauled.

(i) Wherever a steep or long hill is encountered the division concerned will provide a *snatch team* or *teams* to assist its traffic.

(j) Each division will also provide a motor wrecking crew whose duty it will be to remove wreckage that blocks traffic and to salvage motor vehicles.

(k) Road circulation:

1. The road system of the corps is divided into two zones.

(a) The corps zone covers all territory within the corps sector south of the Vraincourt—Clermont—Les Islettes—Ste. Meneshould road (inclusive).

(b) Divisional zones include all territory within their respective sectors north of the above mentioned road.

2. Regulations governing traffic within divisional zones will be prescribed by divisions, but must conform to existing orders.

3. The corps circulation map (copies furnished divisions) shows the route gardee, two-way and one-way roads. The route gardee is reserved for motor vehicles and special application through G-1, these headquarters, to the Army C. R. A. must be made in each case where it is necessary, or desirable, that animal and animal-drawn traffic should be routed over that route.

Engineer road repair vehicles, Signal Corps telephone and telegraph installation, and repair outfits, staff cars, and strictly local traffic may travel counter to prescribed traffic. This is at their own risk, and whenever they halt (except due to traffic congestion) they must clear the road. The corps and divisional provost marshals are authorized to require *all* traffic to follow the prescribed one-way routes wherever an emergency requires such action.

* * * * *

7. Plan of evacuation of sick and wounded.

1. Sanitary organization.

(a) Battalion aid stations, relays of litter bearers, and regimental aid stations will be established by regimental surgeons under the supervision of their respective division surgeons. *In no case will a battalion or regimental aid station be located at the same place as the regimental P. C.*

(b) Sorting and advance dressing stations (triaux) will be established as follows:

77th Division, vicinity of Florent.

28th Division, vicinity of la Croix de Pierre.

35th Division, Neuville.

These stations will be located off the main traffic route, preferably just outside of the town. This to avoid traffic congestion. In each case they should be located west of the main traffic route so that they may be reached by the prescribed one-way roads when the main route is closed for repairs.

Regulations governing evacuation from triages will be as published in Memorandum G-1-48, these headquarters, September 3, 1918.^a

(c) Evacuation points:

All troops of the 1st Corps and within its sector:

Seriously wounded to Evacuation Hospital No. 14, Mobile Hospital No. 4, at Villers-Daucourt.

Slightly wounded to Evacuation Hospital No. 9 at Vaubecourt.

Gassed to Evacuation Hospital No. 11, at Brizeaux-Forestiere.

Ordinary sick to Base Hospital 83 at Revigny.

Neurological cases to Neubecourt.

Contagious diseases to Verrieres.

French:

Sick, wounded and gassed to Evacuation Hospital No. 14, Mobile Hospital No. 4, at Villers-Daucourt.

(d) Evacuation routes:

To Villers-Daucourt, Verrieres, Revigny: Clermont—les Islettes—St. Menchould—south to Verrieres—south to Villers-Daucourt—south via Ante—le Vicil-Dam-Pierre—Givry—Ste. Mard—S. E. via Nettancourt and Brabant-le-Roi to Revigny.

To Brizeaux-Forestieres: From les Islettes—south via Futeau to Brizeau. From Clermont—south via Froidos and Waly to Brizeau.

To Nubecourt, Vaubecourt: From les Islettes—Clermont—Froidos—Fleury—Nubécourt—Beauzee—S. W. thru Pretz to Vaubecourt.

(e) Army and corps troops (both French and U. S.) will use the evacuation system and units of the nearest division.

(f) The sanitary units of the 92d Division will be held subject to the call of the corps surgeon for use where needed. If this division reinforces the line it will use the sanitary organization and system of evacuation of the division it reinforces, or relieves.

(g) If additional transportation is needed call will be made on the corps surgeon, who has at his disposition the ambulance companies of the 92d Division and those of the corps.

^a Quoted in Chapter II, p. 71.

(h) If practicable and the necessity demands it, evacuations from triages at Florent and la Croix de Pierre may be made on returning empties on the narrow-gauge line touching those points.

* * * * *

8. Evacuation of animals:

1. Corps advance collecting point: In woods just south of the railhead, les Islettes on the les Islettes—Futeau road.

2. Army evacuation stations: Heippes, Autrecourt.

3. An application has been made to the 1st Army for a remount squadron for use in assisting evacuations from divisional veterinary sections, from the battle field and from the supply route. Divisional veterinary sections should render first aid wherever possible and group evacuations and then call on the corps veterinarian at the corps advance collecting point to evacuate. In addition the corps hopes to be able to send out a veterinary searching squad in each divisional area to seek out and care for wounded and exhausted animals and to report the locations of dead animals so as to insure early burials. All emergency cases may be evacuated direct to the corps advance collecting point. In case large numbers (150 or more) need to be evacuated, special arrangement must be made by G-1, First Army Corps.

* * * * *

The usual order for burials was included in paragraph 11 of the annex 9: this is quoted in full elsewhere (p. 390). It placed Pioneer Infantry troops detailed to this duty under the exclusive control of the divisional sanitary inspectors.

On September 25, the night before the attack, the corps held the 11-km. (6.8 miles) front between La Harazee and Vouquois. On the left of the corps sector the 77th Division had all four regiments in line; in the center there were three regiments of the 28th Division; and on the right there was one brigade of the 35th Division. The 92d Division (less artillery and one infantry regiment) was corps reserve, and the 82d Division (less artillery) was held in the woods in the vicinity of Clermont-en-Argonne, as army reserve. Liaison with the 91st Division on the right flank of the corps was maintained by one battalion from the reserve brigade of the 35th Division, and with the French 1st Light Infantry Division on the left, by one regiment of the 92d Division and a detachment of French infantry and artillery.¹

On the morning of September 26, the corps attack started at 5.30. Its advance through the Foret d'Argonne was impeded by hostile machine-gun nests and was otherwise hampered by natural difficulties which this thickly wooded terrain presented. On the right, progress of our troops along the banks of the Aire River, in their movement to envelop the forest, was more rapid. During the afternoon, the corps objective, approximately as follows, was reached all along the line: From a point in the Bois de la Grurie, 2.5 km. (1.5 miles) north of la Harazee, eastwardly to 1.5 km. (0.9 miles) northwest of Petite-Boureuilles, thence north and east to about 1 km. (0.6 miles) south-east of Montblainville.^{1, 2}

On September 27, at 5.30 a. m., the attack was resumed. Enemy artillery, which had been withdrawn and which was now in position, as well as an addition to the enemy effectives, combined to prevent any but moderate success.¹

On September 28 the corps again pushed forward. There was no change in the disposition of the division of the corps, whereas two additional enemy divisions were identified.¹

On September 29, the 92d Division (less one brigade) was detached and relieved from duty with the corps. The 28th Division placed in line the regiment which had been held in reserve, in order to strengthen its position in the forest; and the 35th Division also sent forward an additional regiment. On the enemy's front, troops of two additional divisions were identified. The line on this day remained practically unchanged, in spite of a weak enemy counterattack against our position in the vicinity of Montrebeau.¹

On September 30, the 28th Division took over the left portion of the 35th Division sector. In conjunction with this movement one regiment of the 82d Division was assigned to the 28th Division and took a position at Baulny. During the day, in the face of stubborn resistance, the corps resumed its gradual advance in the Forêt d'Argonne; while on the east bank of the Aire our troops, subject to the harassing fire from artillery situated in the forest, retired to the Apremont—Eclisfontaine line. This flank fire, with direct observation, which was the most serious hindrance to our Infantry, was continued until the corps flank attack on Cornay and Chatel-Chéhéry forced the enemy to withdraw.¹

During the night of September 30–October 1, the 1st Division (assigned to the corps on September 29) relieved the 35th Division, which was moved to south of Cheppy.¹

On October 1, the enemy attempted an attack on our positions north and west of Apremont. If prisoners' statements are reliable, complete failure of this attack was due largely to our tanks, which inflicted heavy losses and otherwise disorganized the enemy attack formations.¹

On the night of October 2-3^b the regiment of the 82d Division which had been assigned to the 28th Division was withdrawn, and the 1st Division, spread out on the left up to the original limit of the 35th Division sector, having on its left the 28th Division with one regiment of each brigade and the 77th Division with all four regiments in line.¹

On October 3, the first stage of operations was brought to a close. After the original advance, progress was slow. The corps successfully withstood two counterattacks, and furthermore was subject to constant harassing artillery fire.¹

MEDICAL DEPARTMENT ACTIVITIES

On September 24, a conference was held at Souilly relative to hospitalization for the coming campaign. This was attended by the corps surgeons of the First, Third, and Fifth Corps, a representative of the chief surgeon, First Army, and the chief of the medical group with G-4 of the army. Probable shortage of ambulance transportation gave considerable concern at

^b Operations report, 1st Division, Meuse-Argonne operation, October 17, 1918, gives the night of September 30–October 1 as the date for this change.

this time, but, as it eventuated, the First Army was able to supply the First Corps with sufficient extra ambulance companies to meet its needs.³

Under subparagraph (c) (p. 551) the evacuation points were prescribed; they were those determined upon at the conference at Souilly previously mentioned. Modifications were soon made as follows:⁴

Gassed: Evacuation Hospital No. 14, at Villers-Daucourt. Gas Hospital No. 4, at Rarecourt.

Nontransportable wounded: Mobile Hospital No. 2, at Chateau de Salvange. Mobile Hospital No. 4, at La Grange aux Bois.

Ordinary sick: Evacuation Hospital No. 9, at Vaubecourt.

Seriously wounded: Evacuation Hospital No. 14 at Villers-Daucourt. Mobile Hospital No. 4 at La Grange aux Bois. Evacuation Hospital No. 11, at Brizeaux-Forestieres.

Slightly wounded: Field Hospital No. 161, at Futeau, thence to Evacuation Hospital No. 9, at Vaubecourt.

The First Army established a gas hospital at Rarecourt, in a French Adrian barracks hospital. Its personnel were inexperienced and untrained, but by the active assistance of the corps medical gas officer were able to discharge all duties imposed upon them. The number of actually gassed in the First Corps during this operation was comparatively small.⁴

Mobile Hospital No. 2 was established in Chateau de Salvange. This building was in good condition; it was located about 3 km. (1.8 miles) southwest of Rarecourt. The hospital in question was designated for nontransportable wounded, though in reality it was too far back for this purpose. It drained the right half of the First Corps advance area.⁴

Mobile Hospital No. 4, established at La Grange-aux-Bois, on September 29, was located on the western side of the Argonne, on the Clermont-St. Menehould road. Inasmuch as the operation was a flanking one (on the east of the Argonne so far as Americans were concerned) casualties from this side were not very numerous, and therefore the hospital was not occupied to the limit of its capacity. For the care of nontransportable patients both of these Mobile Hospitals, No. 2 and No. 4, should have been closer to the front.⁴

As Revigny was too far back from the lines to receive the sick, Evacuation Hospital No. 9, at Vaubecourt, was designated to care for them and was found much more satisfactory than a more distant unit would have been.⁵

THE INFLUENCE OF ROAD CONGESTION ON EVACUATION

From the standpoint of the corps evacuation service, the outstanding feature at this time was the extremely congested condition of roads. This was due to several causes:⁶ (1) Lack of proper road discipline. Well-conceived orders governing road traffic were in force but were not properly carried out. For example, the orders were that every tenth truck in a convoy should display a red disk and that no vehicle approach within a certain number of yards of this truck, so that in place of a solid line of vehicles there should have been a break after every tenth truck, making it possible for ambulances and staff cars to wind around and pass a block in the road. As a matter of fact, how-

ever, trucks continued to crowd up close so that there were miles of a continuous line of motor vehicles with practically no space between any of them. Traffic was sometimes completely blocked for hours.⁶ (2) Few roads. One main road, Clermont—Varennnes, was supplying the entire corps with three divisions in the line.⁷ (3) Mine craters. Just south of Varennnes and also of Boureuilles, on the main road, there were two immense mine craters approximately 100 feet wide and 40 to 50 feet deep, so placed that a fill had to be made in order to get around them while a bridge was being built. It took many days fully to overcome this difficulty.⁷

Road congestion during the early days was so great that on one occasion ambulances were practically at a standstill for 24 hours. At one time during the early days of this operation the corps surgeon was informed that the 35th Division, at Neuville, had a number of wounded at that point and was having difficulty in evacuating them. Thereupon he took the commanding officer of the corps sanitary train and the corps consultant in medicine with him and proceeded by motor to Neuville to see what could be done to relieve the situation. Upon reaching a point about 0.8 km. (half a mile) from Neuville they could go no farther, the road ahead being blocked by a continuous line of motor vehicles which appeared to extend for miles. They walked the remaining distance, instructing the chauffeur to follow with the automobile as soon as he could do so. During the three or four hours spent by these officers at the 35th Division triage their automobile had not advanced more than a hundred yards. Though ambulances had the right of way to the rear, even with this advantage they could make no headway against the road congestion.⁷

This situation interfered many times with the work of evacuating patients, but the first phase of this operation was by far the worst period. Delays were inevitable, and nothing that the Medical Department could do had much effect in obviating or in measurably alleviating the difficulty.⁷

At this time the First Corps sanitary train consisted of three field hospitals and three ambulance companies, all motorized.⁵ Its work was divided as follows:⁵

CORPS REST CAMP

At Futeau, a quiet, sheltered spot in the middle of the Argonne, on the road between Les Islettes and Brizeaux, the corps sanitary train placed its three field hospitals and established what was later called the corps rest camp. It was far enough back to be out of range of enemy artillery, centrally located so as to cover the entire corps front, and so sheltered and quiet as to be ideal for rest. Several subjects were discussed by the corps surgeon in this connection:

*The rest camp proper.*⁸—It was surprising to the inexperienced to see how many cases of simple exhaustion were sent to the rear. Many of these men were sent back with a diagnosis of shell shock or as gas cases when, as a matter of fact, they were simply exhausted, mentally and physically. All they needed was a complete rest, good food, quiet, and a bath, and in a day or two they were usually completely restored and fit for duty again. In the

early days of the Chateau-Thierry campaign, due solely to exhaustion, many men—the numbers probably running into the thousands—got back into the base hospitals. They became a serious problem, as they were occupying beds which were none too plentiful and which at any time might be urgently needed for the actually sick or wounded. Establishment of this rest camp solved the problem so far as the First Corps was concerned. Later on it was planned by General Headquarters to establish a convalescent camp of 5,000 cots for the entire army, but before this could be accomplished the armistice was signed. The corps rest camp served the double purpose of relieving base hospitals of an unnecessary burden and of saving man power for the front line at a time when every man was badly needed. In active operations divisional field hospitals were quite unable to hold a patient a longer time than was required to give him the necessary preliminary care and treatment and to secure his transportation to the rear. Neither the slightly sick nor those who were merely suffering from exhaustion could be retained in these formations, since their successful operation was based on their ability to move at a moment's notice.⁸

Slightly sick.—At the corps rest camp were received the slightly sick from divisions in the corps. If it was thought that these patients would be fit for a return to duty within 7 to 10 days, they were held here to be returned to duty when their condition fully warranted this action. Serious cases were never held here, and if in a supposedly slight case the patient later developed serious symptoms he was sent immediately to an evacuation hospital.⁹

Relay for the slightly wounded.—The corps rest camp was used as a collecting point for the slightly wounded, usually sent there by trucks from the divisional triages. From this point the corps sanitary train carried them to the designated evacuation hospital. No operations were permitted at this camp.⁹

Collecting point for men returned from evacuation and gas hospitals.—Arrangements were made with evacuation hospitals to notify the commanding officer, corps sanitary train, of any cases erroneously sent to the evacuation hospital from the divisional triages which should not be sent farther to the rear. Similar arrangements were made with the gas hospital for such patients as were not actually gassed or who were so slightly affected that they would be fit for duty within a few days. Upon such notification the commanding officer of the corps sanitary train sent necessary transportation to these hospitals and these cases were moved to the corps rest camp, thus providing another check to prevent men without real disability being sent to the rear. When such cases did get into a base hospital it meant that they were lost to the front for a period of weeks, as there was inevitable delay in returning them to the line through replacement depots. The saving of time in each such case was therefore great.¹⁰

Equipment.—A certain amount of clothing and equipment was kept on hand at this camp, so that when men were returned to duty from it they would be properly clothed and equipped. These supplies were necessary, as here

all of their equipment and frequently much of their clothing had been salvaged on their journey from front to rear.¹⁰

Destination on return.—Divisions were called upon to designate places to which their men should be returned. This was essential to prevent them being sent to points inconvenient for further distribution and to preclude delay and fatigue in consequence through their wandering about in search of their organizations. At appropriate intervals the corps sanitary train collected men fit for duty and distributed them to the points designated by their divisions.¹⁰

Exercise.—When fit for some exertion all patients at the camp were given appropriate exercise in order to keep them in good condition. Care was taken that no one was returned to his organization who was not thoroughly fit for full duty.¹⁰

AMBULANCE COMPANIES

The commanding officer of the corps sanitary train had his headquarters at Rarecourt, with the corps surgeon, and here he kept his three ambulance companies as well as the additional companies furnished the corps by the army. By this means he always had a reserve on hand for assignment where most needed. From this reserve, ambulances were sent to reinforce, as required, the sanitary train of any division in the line. When a division's needs ceased these ambulances were withdrawn from it, cleaned, and repaired, and the personnel was given opportunity to rest. They were then available again for duty with any division that might be in difficulties. This method enabled the corps to meet all evacuation needs promptly during the Meuse-Argonne operation.¹¹

DISTRIBUTION OF WOUNDED

Examination of the plan of evacuation prescribed by Field Order No. 57 and by the later modifications, as noted, shows that there were eight widely separated points to which sick and wounded from the First Corps were to be evacuated. These were Villers-Daucourt, Brizeaux, Vaubecourt, Rarecourt, Chateau de Salvange, La Grange aux Bois, Nubecourt, and Verrieres. The number was increased later. One unfortunate result of this dispersion was that ambulance drivers became confused with the multiplicity of directions given them, and much difficulty in evacuation ensued. Having learned the way to a certain hospital a driver would often concentrate on that one, taking patients only to that point and thus causing it to become congested, while other hospitals might be relatively inactive. The commander of the corps sanitary train controlled this situation by the following method:¹¹

(a) Enlisted men were stationed at important points on the roads and were charged with the proper direction of all passing ambulances. These places displayed by night illuminated signs made of an ordinary box with the front replaced by removable, perforated sheeting, and lighted by candles. Lettering of signs for use by day was large and black. The following is an example of the signs used:¹²

“E. H. at Fleury closed. E. H. at Froidos receiving”

(b) The men acting as road guides were under the immediate supervision of an officer of the day, appointed by roster from the corps sanitary train.

(c) The commanding officer, corps sanitary train, kept in touch with all evacuation hospitals draining the First Corps, and thus always knew the available bed capacity of each. This information was promptly transmitted to the officer of the day, who passed it on to the road guides. The latter were thus prepared at all times to direct ambulance drivers intelligently. As it proved, however, road congestion was frequently so great and telephone service so unreliable during active operations that it became impossible to keep the corps accurately informed concerning the number of vacant beds in the different evacuation hospitals, and this caused much time to be lost and transportation wasted by taking cases from one hospital to another in the search for vacant beds. In the early part of this operation it happened on occasion that some hospital would fill and then, without first sending notification to the corps or division surgeon, would refuse to accept more cases. Under such circumstances a chauffeur might have to drive about for a long time in search of a hospital where he could leave his patients.¹²

(d) A medical officer from the corps sanitary train, stationed at the triage of each division belonging to the corps, in the line, was responsible for evacuation from the divisional triage.¹³

(e) A medical officer from the corps sanitary train was stationed at each important evacuation hospital, and one would have been placed at every evacuation hospital had there been enough of such officers available for this purpose. The duty of these officers was supervision of the unloading of ambulances, the exchange of supplies, the instruction of drivers and orderlies concerning their return, and the adjustment of any other matters pertaining to the ambulance service. They also kept a record of the time when ambulances arrived and departed. A similar record was kept at the triages by the medical officers from the corps sanitary train, at those points, so that information was immediately available concerning the time required by a given ambulance to cover the distance between triage and evacuation hospital. This was an effective check upon any ambulance driver who might be inclined to drive to a secluded spot and rest after unloading his cases; such action, however, was extremely rare. As a matter of fact, working against almost insuperable difficulties, such as congested roads, long hours, driving at night without lights over unfamiliar ground, these drivers performed their tasks willingly, courageously, and most efficiently.¹³

During the Meuse-Argonne operation the corps sanitary train developed progressively in efficiency and formed a most important link in the chain of evacuation.¹³

THE 77TH DIVISION

During the night of September 23-24, 1918, elements of the 77th Division were placed in the second line, Foret d'Argonne, the French retaining the first line as a screen to our (American) operations from the observation of the enemy. The Artillery of the division reached the new sector on the night

of September 24-25, and there went into position for a contemplated attack.^{14, 2}

This attack was fixed for the morning of September 26. The division front was about 7.5 km. (4.6 miles), extending from a point approximately 1.5 km. (0.9 mile) north and one-third kilometer (0.2 mile) west of La Harazee, thence southeasterly through the Four de Paris and easterly to Pierre Croissee.^{14, 2} All four Infantry regiments of the division were in the front line.¹⁴

At 5:30 a. m. on September 26, and after an artillery preparation of six and one-half hours, the division advanced, having on its right the 28th Division and on its left the French 1st Light Infantry Division. The artillery preparation was extremely efficacious so far as the front lines of the enemy position were concerned, and very little active resistance was encountered therein. This position of Foret d'Argonne had been regarded by both the French and the Germans as a rest area; consequently material obstacles in the way of barbed wire entanglements, deep trenches, etc., were extremely extensive and complete. The material obstacles alone, then, rendered the task of the infantry extremely difficult, and it was only by the most persevering efforts on the part of our men that the advance made on this day was accomplished. At the end of the first day's operation the left flank had advanced 1 km. (0.6 mile) and the line extended approximately southeasterly to a point about one-fourth kilometer (0.15 mile) south of Fontaine Four Zube, thence easterly for about three-fourth kilometer (0.45 mile), thence northerly for about three-fifths kilometer (0.37 mile).^{14, 2}

On September 27 the division renewed the attack at 5.30 a. m., endeavoring to keep in liaison with the allied units on the right and left. During the course of the 27th, the strongly entrenched positions of Abri de St. Louis, Fontaine Four Zube, and St. Hubert Pavilion were attacked. The 305th Infantry assaulted Abri de St. Louis four times before resistance there was overcome, and the 306th assaulted the trench position in the Fontaine Four Zube three times before the enemy was finally driven back. At the end of the day the division line was exactly the same as that of the day before.^{14, 2}

The attack was continued on the 28th, the infantry continuing its advance at 6.30 a. m., forcing the enemy who had been entrenched at St. Hubert Pavilion and in the Abri de St. Louis, to retire by our attack. At the close of the day the left flank had advanced one-half kilometer (0.3 mile) north, the line extending thence north of northeast 1 km. (0.6 mile), thence easterly $1\frac{1}{2}$ km. (0.9 mile), thence southwardly eight-tenths kilometer (0.48 mile), thence easterly 2 km. (1.2 miles), thence northeasterly $1\frac{1}{2}$ km. (0.9 mile).^{14, 2}

The division continued its advance from day to day, attacking each morning, continuing to attack and advance during the day. No organized positions were encountered after passing the enemy first line of resistance until the position running along the crest of the Bois de la Naza, extending thence westward (south) along the adjacent ridge into the trench system running south and southeast from the Bagatelle Pavilion was reached.¹⁴

The enemy organized position, just referred to, was encountered on the morning of October 1. The entire position was attacked but very little progress was made during the day.¹⁴

On October 2, the attack was resumed at an early hour in the morning and the position was penetrated on the left toward evening, by the 1st Battalion of the 308th Infantry, together with elements of the 307th, and elements of the 306th Machine Gun Battalion. This detachment advanced as far as the position near Bois de la Buironne, on La Viergette Road, about 500 meters (545 yards) to the east of Moulin de Charlevaux. The troops on the right of this detachment, however, were unable to penetrate the positions on their front. During the night the enemy forces penetrated the trenches south of the Bagatelle position, and linked up with those trenches, by wire entanglements, the positions on the ridge west of Bois de la Naza, in such a manner as to isolate the detachment referred to. At the end of the day the division line extended from a point approximately 1 km. (0.6 mile) northeast of Binarville, thence eastward approximately 4 km. (2.4 miles).^{14, 2}

On the morning of October 3 the attack was renewed, the purpose being primarily to advance and secondly to reestablish communication with the detachments which had been cut off by the enemy. Owing to the difficulties of the terrain, the absence of adequate artillery preparation, and the thick character of the country, no appreciable progress was made during the day either on the right or left. At the end of the day the left flank had withdrawn to a point approximately three-fifths kilometer (0.3 mile) south of that attained the day before. Thence the line extended northeasterly to the parallel of the day before, thence easterly to the division elements.^{14, 2}

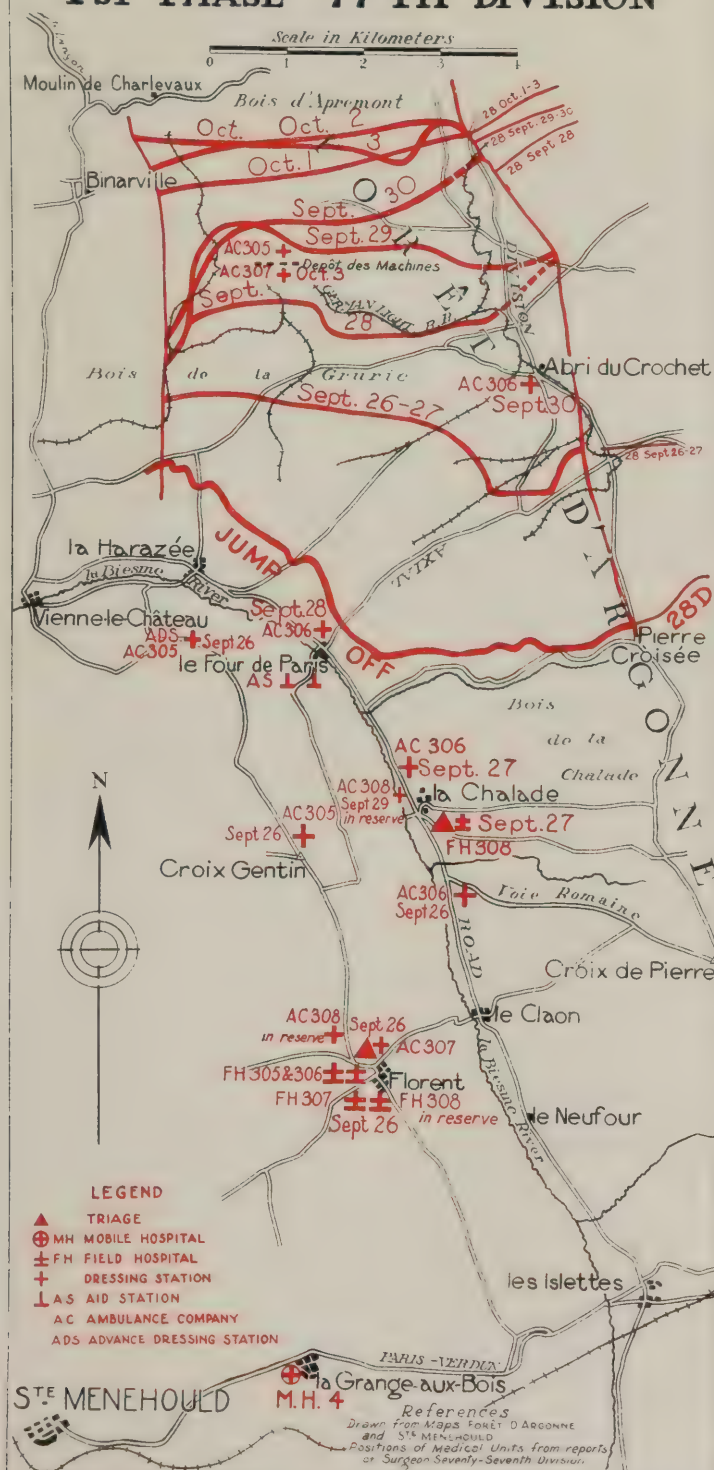
MEDICAL DEPARTMENT ACTIVITIES

As a result of its previous experiences, the medical department of the division had now adopted the following tentative plan for removal of wounded. Two ambulance companies were to be sent forward and two held in reserve, to advance beyond the others when the military situation warranted. One of the field hospitals was to be used for gassed, one for general medical, and two for surgical cases, and two triage units were organized from personnel of the two last named hospitals.¹⁵ How radically this plan had to be modified is indicated below and in the history of the 77th Division in the second phase of this operation.

In anticipation of the operation, Ambulance Company No. 305 established a dressing station at La Croix Gentin, with a car post west of Le Four de Paris, detailed five runners to maintain contact with regimental and battalion posts, and sent its litter-bearer section forward to bring the wounded from the regimental aid station of the 307th Infantry, some $11\frac{1}{4}$ km. (0.7 mile) distant. On the evening of September 26, this company established an advance dressing station 1 km. (0.6 mile) south of La Harazee, advanced the car post to the same point, discontinued the former bearer route, and brought to this place patients from the regimental aid stations of the 307th and 308th Infantry. During the afternoon of this day the litter bearer route covered

MEUSE • ARGONNE

1ST PHASE 77TH DIVISION



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.



FIG. 64.—La Châlade, Ardennes, France, where a triage was established by Field Hospital No. 308, 77th Division, September 28, 1918

2½ km., (1.5 miles) through the trenches. Ambulance company dressing stations were located in French dugouts. Evacuation, both by litter and by ambulance, was retarded by muddy roads. The ambulance company used eight Ford cars between the dressing station and the triage at La Florent, while its heavier cars were assigned in rear of the triage.¹⁶

Ambulance Company No. 306 operated a dressing station in a log cabin on a road which entered the road from La Chalade to La Claon, about 1 km. (0.6 mile) south of the former town. Here it cared for 60 gassed cases and 10 sick from the 28th Division.¹⁶



FIG. 65.—Triage operated by the 77th Division, La Chalade, September 28, 1918

Ambulance Company No. 307 operated the triage at Florent, about 7 km. (4.3 miles) behind the line, where Ambulance Company No. 308 was held in reserve (supplying 25 men to the triage), and here the field hospitals were grouped.¹⁶ Field Hospital No. 305 received medical cases, No. 306 the gassed, No. 307 the slightly wounded, and No. 308 was held in reserve, but ready to move.¹⁶ Ford cars, including those of United States Army Ambulance Service Sections No. 578 and No. 611, delivered patients at this point, and 12 G. M. C. ambulances evacuated to the rear those who would not be fit for duty in four days.¹⁶

On September 27, the ambulance companies continued to operate as before except that Ambulance Company No. 306 established a dressing station at La Chalade with 2 officers and 15 men and sent 48 litter bearers to the 305th

and 306th Infantry. The station here admitted about 300 cases, which it sent to the triage. It maintained 2 ambulances at its ambulance posts and employed a total of 20, alternating shifts of 10 each.

Field hospitals remained as on September 26, except that No. 308 moved to La Chalade at 6 p. m., occupying the church there as a triage. In the interval September 27 to October 11 this hospital received from the 77th Division, 3,284 patients, of whom 2,613 were wounded, 47 gassed, and 624 sick.¹⁷

On September 28, the length of the bearer route of Ambulance Company No. 305, across very difficult terrain, had increased to $5\frac{1}{2}$ km. (3.5 miles). The dressing station detachment of this company at La Harazee was now increased by 16 additional men. The 306th Company sent 48 bearers to Infantry regiments and with 1 officer and 8 enlisted men established a dressing station in an old dwelling built into the side of a cliff near le Four de Paris. About 250 cases were received there on this date. Twenty ambulances from United States Army Ambulance Service sections, in shifts of 10 each, were used to serve with this ambulance company which kept 2 ambulances at its ambulance posts. On the afternoon of this date Ambulance Company No. 307 sent 8 noncommissioned officers and 40 other enlisted men to the Depot des Machines to assist Ambulance Company No. 305 in evacuating cases from the 307th and 308th Infantry aid posts to the dressing station at La Harazee. This evacuation was attended by almost insuperable difficulties, being principally by hand carriage over very difficult ground, though at times it was possible to evacuate by a narrow-gauge railway. From the regimental aid stations to the Depot des Machines the distance was approximately $2\frac{1}{2}$ km. (1.5 miles), and from that point to La Harazee 6.5 km. (4 miles), necessitating, with the rough terrain, the establishment of relay posts at short intervals. All this evacuation was effected under harassing artillery fire and sniping. The triage which the company had been operating closed at 12.30 p. m. on the 28th, after caring for 372 patients. No change was made in the location of Ambulance Company No. 308 nor of the field hospitals.¹⁸

Bearer routes of Ambulance Company No. 305 were changed on September 29 so that both converged to the car post at La Harazee, the length of these routes being approximately 6 km. (3.5 miles). Ambulance Company No. 308, now in reserve, moved to the neighborhood of La Chalade, where 50 men and 7 wagons were employed as a road-building detail at the triage. There was no change in the disposition of other units. On September 30 the only change in service was the establishment by Ambulance Company No. 306 of an advance dressing station in a dugout at Abri du Crochet, near the regimental post control of the 305th Infantry. Personnel of this station was 2 officers and 10 men, while 48 litter bearers carried patients 1 km. (0.6 mile) to the car posts, which were 3 km. (1.8 miles) in advance of the main dressing station. The following day, Ambulance Company No. 307 sent from Florent 3 additional noncommissioned officers and 20 other men to assist in evacuation from the 307th and 308th Infantry to La Harazee.¹⁹ Bearer routes were

gradually lengthened on account of the advance of the troops, until on October 2 those of Ambulance Company No. 305 had increased to 7 km. (4.3 miles) and others proportionately. The company dressing station at La Croix Gentin was discontinued on October 3, its personnel reinforcing that at La Harazee. On the same date Ambulance Company No. 307 established at the site of the regimental aid station of the 307th Infantry a station near the Depot des Machines, where it relieved Ambulance Company No. 305, which had been operating in that area.

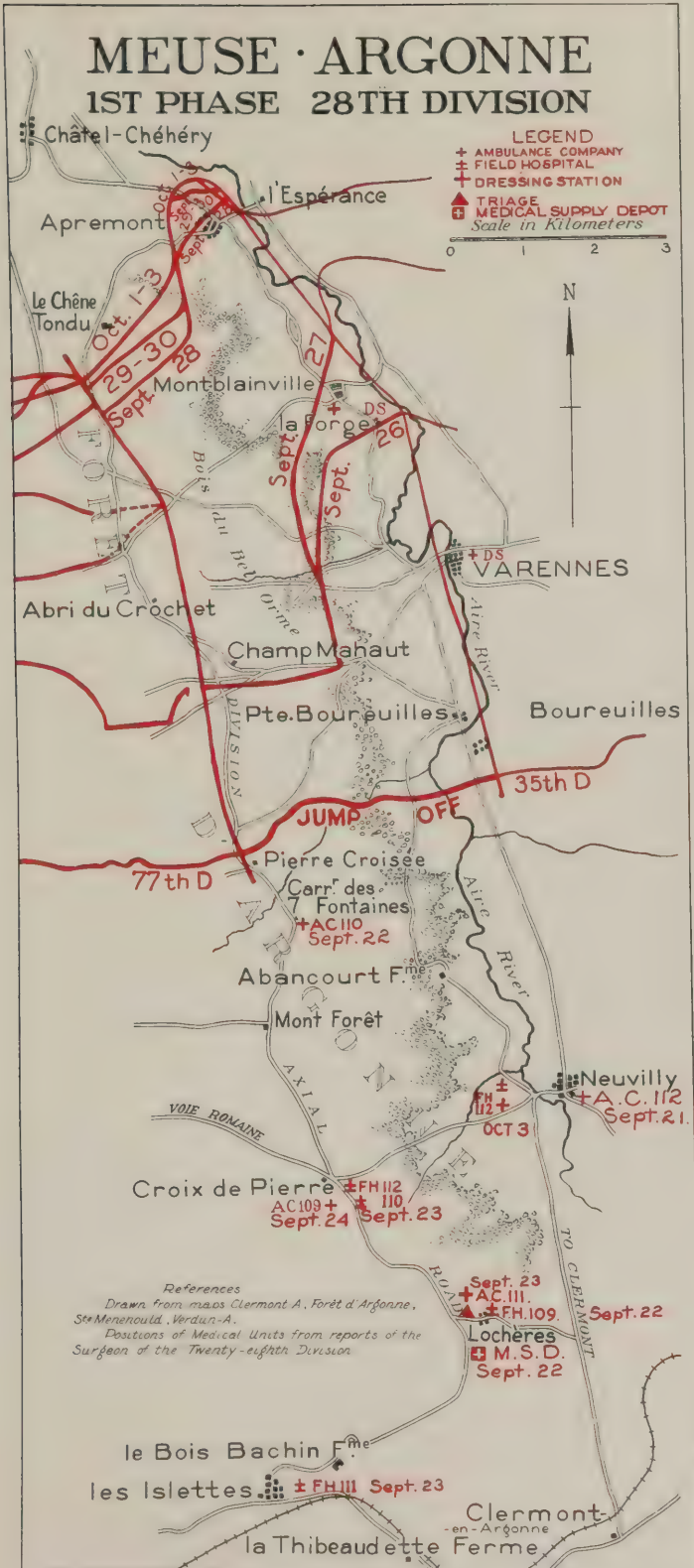
On this date, the last day of the first phase of the Meuse-Argonne operation, units of the sanitary train of the 77th Division were disposed as follows: Ambulance Company No. 305 near La Harazee; No. 306, Abri du Crochet; No. 307, Depot des Machines; No. 308, La Chalade; Field Hospitals, Nos. 305, 306, and 307 at Florent, 308 at La Chalade.²⁰

THE 28TH DIVISION

At the beginning of the Meuse-Argonne operation, the 28th Division held a sector extending from Pierre Croissee on the west to the vicinity of Bourneilles on the right. The 35th Division was on its right and the 77th Division on its left.²²

On September 26, at 5.30 a. m., all fire settled into a standing barrage on the German front line for 25 minutes. The direction of the attack was approximately down the valley of the Aire, with the river on the right flank and the Foret d'Argonne on the left. The 55th Brigade was in the right front of the line and the 56th Brigade was on the left.^{21, 22} The advance was to be pushed rapidly along the Aire Valley, while the left of the line was to be echeloned to the rear to follow up and complete the capture of that part of the wooded heights of the Argonne in the division zone.²³ The attack was launched successfully, although some units were late in arriving at their position. In the advance the right of the line progressed rapidly forward after once getting started, but the left, likewise behind schedule, made slow progress in the Argonne forest. Some of the elements of this part of the line became lost in attempting to move forward across No Man's Land and into the German trench system. At the end of the day the line approximately reached the corps objective on the right. It extended from the vicinity of La Forge, southwestwardly to the vicinity of Les Escomportes Ferme, thence to a line just south of Cote des Perrieres which extended westwardly to a point about 500 meters south of Carriere des Meurissons.²⁴

On September 27, at 5.30 a. m., the attack was renewed. The enemy increased their resistance to our advance by machine-gun and artillery fire to an extent almost to check further advance. In the morning, the 2d and 3d Battalions, 111th Infantry, pushed north, overcoming resistance in the Foret d'Argonne, supporting the attack of the 112th Infantry. The objective was given as combined army first objective. At midnight the line was approximately as follows: Vicinity of Baulny, thence south to Les Escomportes Ferme, thence as of the preceding day.^{21, 2}



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

During the night of September 27-28, the 56th (left brigade) which was held up in its advance through the *Forêt d'Argonne*, was withdrawn and was marched around through the open to the east of *Côte des Perrières*, to a position in the ravine south of *Le Chêne Tendu*. One battalion was left in position in *Forêt d'Argonne*, maintaining liaison with the 77th Division.²¹

On the morning of September 28 the attack was renewed. At noon the line had advanced slightly so that it included *Apremont*, then ran southwest parallel to the army objective, to the vicinity of *Pont à l'Aune*.^{21, 2}

On September 29, the attack was continued during the day, the enemy increasing his resistance with infantry reinforcement, with machine guns, and artillery. The 112th Infantry made an unsuccessful attempt to pass around *Le Chêne Tendu*. After heavy artillery preparation the attack continued on *Le Chêne Tendu*, making a little progress. At nightfall the division line was practically unchanged except for a slight improvement in some places.²¹

On September 30, the division organized for defense a line which crossed the sector of the division on a line *Apremont—Le Chêne Tendu*. This order was effected during the day. The line was pushed forward slightly in some places to strengthen the position and close contact was maintained all along the line.²¹

On October 1, the division line was organized. However, as a part of the line was very exposed it was determined to push forward in some parts, thus obtaining more advantageous positions. With this end in view the artillery preparation had been ordered for 6 a. m. and at 6.30 a. m. the infantry was to advance along the entire division line and establish itself in the new position, which would be improved during the day. At 5.45 a. m., however, the enemy launched an attack, with about one division, over our entire divisional front. This attack was of the most vicious and determined character. Fortunately our troops were on the alert, awaiting their own hour of attack, so that in spite of the heavy barrage, especially heavy on *Apremont*, the line was ready to receive the enemy.²¹

On October 2 and 3, the division line remained unchanged.²¹

MEDICAL DEPARTMENT ACTIVITIES

For the jump-off of September 26, Ambulance Company No. 110 established a dressing station at *Les Sept Fontaines*. Ambulance Company No. 112 already had placed a dressing station detail at *Neuvilly*, September 21, and another at *Le Vieux Forêt*, on the same date. Ambulance Company No. 109 was in reserve near *Croix de Pierre*, and Ambulance Company No. 111 was at the triage at *Locheres*, to act as an evacuation ambulance company. Ambulance Company No. 112 served the 55th Brigade, on the right, and Ambulance Company No. 110 the 56th Brigade, on the left. Litter-bearer details from these companies followed the troops closely, participating in their difficulties. During the first 12 hours it was necessary for them to make long carries, frequently under fire and often cut off from supplies. These details followed the division's advance through *Boureuilles*, *Varennés*, *Montblainville*, *Apre-*

mont, and, in the second phase of the operation, to Chatel Chehery and almost to Fleville. One litter squad, when searching for wounded, came upon a concealed German machine-gun nest and captured its crew of 11 men.

On the 27th, a large dressing station was established at Varennes, with personnel from all four ambulance companies. This station was near the front and was unusually complete, maintaining, among other departments, a separate shock room. It was estimated that 3,500 patients were treated at this point, for from the date of its establishment it was the principal dressing station of the division.²⁵

As the main highway southward from Varennes was blocked with traffic, a road through the woods, across No Man's Land, was opened by the ambulance sections. This was used to marked advantage for 36 hours; then it was cleared of all traffic save artillery and ammunition trucks, thus throwing ambulances back on the crowded road to Varennes, where traffic was obstructed by two huge mine craters as well as by great congestion.²⁵

When the division passed Apremont a collecting point was established at Montblainville. As the ruins of that town offered no protection against enemy artillery fire, cellars with 2 or 3 feet of earth and stone covering were utilized to shelter both patients and personnel. Though the two available roads to the rear were frequently shelled, the evacuation of patients proceeded without interruption.

The triage was located at Locheres and was operated by Field Hospital No. 109, which had reached that point at 11 p. m., on September 22. This hospital took over a large barn, the best building available for the purpose, and arranged dressing tables, record desks, and shock tables in the smaller part of the structure, which had flooring of brick and tile. The larger section, a shed for farm implements, was prepared for use as a storeroom and as a ward for patients awaiting evacuation. By noon of the 23d, the entire building had been cleaned, disinfected, and made ready for patients.²⁶

Although the attack began on the morning of the 26th, patients did not begin to arrive in any considerable numbers until the following evening. The entire hospital personnel was divided into two shifts, but the irregular arrival of the wounded made it necessary to arrange for special reliefs. At 5.45 p. m. on September 27 the ambulances and trucks, delayed for hours by roads and trucks, began to come in from the dressing stations. By 7.45 some 350 patients had been recorded. The rush then abated, but by noon of the 28th, 549 cases had been admitted. The number of arrivals continued large, but irregular, until October 4, the largest number received in one day being 688 and the total number 3,428.²⁷

Work of the triage was carried on quickly and without confusion, although space was extremely limited. Two benches were constructed in the receiving division, at each of which the required blank forms for each patient—the register card and the field medical card and envelope—were filled in. With the envelope attached to his clothing, each patient was transferred to the dressing table for examination and treatment. Here further necessary notations were added to the records. The patient was then re-

moved to the ward, or immediately evacuated. As he was placed in an ambulance his destination was added to the register card. The record of evacuation, on the "Daily report of casualties and changes," was made only after each register card had been checked against the corresponding record of admission.

This hospital was closed on October 4, and on the 11th followed the division to the rear, for rest at Bouvron.²⁷

Field Hospital No. 110 was established on September 23 near Croix de Pierre and by morning of the 26th was ready for duty. The total number of patients here received was 732, of which 267 were returned to the front. The greatest difficulty encountered was a shortage of water for bathing purposes.²⁸

Field Hospital No. 111 reached Brizeaux on September 20 and on the 23d moved to Les Islettes, where a number of dwellings, two schoolhouses, and a barn were utilized. There was a large increase in the number of influenza cases admitted here.²⁹

Field Hospital No. 112 was located first at Froidos, and then, on September 23, near Croix de Pierre. Here a French underground dressing station was occupied and shock tables set up. During that night and the next day 46 patients were received. With the help of the engineers, a clearing was made in the forest sufficient for the erection of four large tents, roadways were built, and a complete field hospital was installed. Enemy shelling was intermittent. On September 26, 86 patients were received, on the 27th, 200, and on the 28th, 172. Then the underground hospital was destroyed by a fire of unknown origin. Roads also became so choked with traffic that travel was all but impossible, and Field Hospital No. 109 at Locheres took over most of the work. Occasionally an ambulance worked its way through to the front, but from September 29 to October 4 only 58 cases were received. The hospital then moved to Neuville and was installed there in a large barn.³⁰

THE 35TH DIVISION

On September 17, 1918, the 35th Division was attached to the First Army Corps, and passed under the tactical control of the French Second Army. On September 18 it was placed under the command of the general, Groupement Mordacq, pending the assumption of control of the sector by the American First Army, September 22. On the night of September 20-21 the 35th Division relieved the French 73d Division in the Grange-le-Comte sector.^{31, 32}

On September 26 the division attacked on a front, Vauquois (inclusive) to Boureuilles (exclusive), at 5.30 a. m., after six and one-half hours' artillery preparation. The division attacked in a column of brigades, the 69th Brigade in the lead, the 138th Regiment on the right, and 137th Regiment on the left. The 70th Brigade followed at a distance of about 2 km. (1.2 miles), with the 140th Regiment on the right and the 139th Regiment (less one battalion) on the left.³³

In accordance with the plan of attack, Vanquois Hill and Bois de Ros-signal were passed through by the flanks and were cleared of the enemy by the battalion detailed thereto. On the left flank the leading battalion of the 137th Infantry was held up by heavy fire from Varennes and was later passed through by the 139th Infantry. The advance was held up for some time by very heavy machine-gun and artillery fire from the front and by heavy artillery fire from the 28th Division sector on the left, and also by flanking batteries on the right. Heavy casualties, particularly among officers, were suffered during this stage of the attack. Varennes was finally taken by the left combat group; in cooperation with the tanks, Cheppy also fell.³³

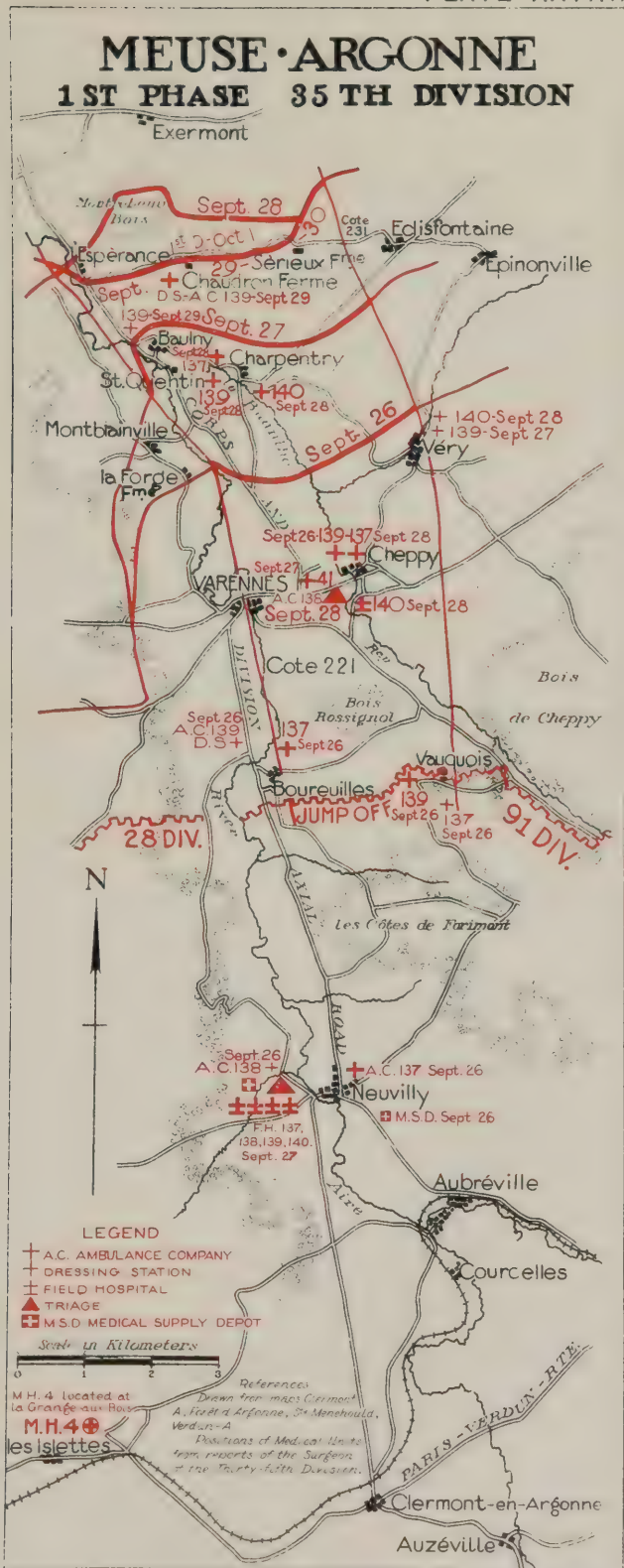
Many of the senior officers had been killed or wounded during these actions and the units had become intermingled, due largely to the dense fog. The battalions were reorganized and the advance was continued to the south of Charpentry, with the right near Very and the left to the north of Varennes.³³

On September 27, at 5.30 a. m., the division renewed its attack, but only one battalion of Field Artillery supported the attack, though all the Light Artillery had advanced beyond the old front position and could have supported the attack. A passage of the lines was made and the attack was carried out by the 70th Brigade. The 69th Brigade supported the attack.³³ After a short advance serious resistance was met from the enemy's artillery and machine guns, and little progress was made. The town of Charpentry was a particularly strong point, and the flanking artillery fire from the left caused many losses. Tanks were brought up and the attack against Charpentry was renewed with but little success, owing to the heavy artillery and machine-gun fire. At 5.30 p. m. a new advance was ordered. In this attack Charpentry was taken, as was also the town of Baulny. In the night advance some links of the division progressed beyond Montrebeau woods, but the main body entrenched near Baulny.³³

During the day the artillery was advancing into positions north of Varennes and Cheppy. By night all guns were in advanced position and were set for firing in the region of Montrebeau woods, l'Esperance, and Exermont. The command post of the division was at Les Cotes des Forimont.³³

At daybreak on September 28 the enemy made a counterattack, which was repulsed. The division advanced under heavy artillery fire, the fire from the left flank across the river being particularly deadly, since it was necessary to cross open fields in full view of the enfilading batteries. On the left, the advance reached the northern edge of the Montrebeau woods; on the right, the attack being made a little later, reached a position about 500 yards north of l'Esperance—Chaudron Ferme road. Enemy artillery and machine-gun resistance was strong, especially on the left flank.³³

The attack was resumed at 5.30 a. m., on September 29. The formation was now in two columns. The left column succeeded in pushing a few men to the ravine west of Exermont, with enemy machine guns menacing their flanks. The right column was held up by heavy artillery fire at the start, and as the



supporting elements of the left column were unable to advance, the leading battalion was forced back to the northern edge of the Montrebeau woods. Later, elements of the right column succeeded in pushing forward to Exermont, but not in sufficient force to hold the position. At this time the division commander made a personal reconnaissance and found that the losses, especially in officers, had been so great that it was necessary to reorganize, and that it was impracticable to try to push the attack further. He therefore directed that the troops in Exermont fall back after dark, the withdrawal being covered by the troops in the Montrebeau woods. The condition of the troops in Exermont had become so precarious, owing to flanking machine-gun fire, that they were forced to fall back before dark; but the withdrawal of these troops and also of those in the Montrebeau woods was successfully accomplished, although heavy losses had been suffered during the day.³³

On September 30 a defensive position was organized with the line Cote 231—Serieux Ferme—Chaudron Ferme—l'Esperance, as the line of resistance, with a second line on the ridge north of Baulny. These lines were organized and consolidated by the 110th Engineer Regiment. The outpost position was held by the 69th Brigade and the 128th Machine Gun Battalion, with the 70th Brigade in reserve at Charpentry. The position was held under heavy artillery and machine-gun fire throughout the day. Two hostile counterattacks were made, but they were easily repulsed. Early in the afternoon a battalion of the 82d Division moved up just east of Baulny with orders to attack. A heavy hostile barrage was brought down on this battalion and on the rear defensive position of the 35th Division, causing many losses. The battalion of the 82d Division took over a part of the front trenches and, a detachment of the 110th Engineers holding them, withdrew to the second line.³³

On the night of September 30–October 1, the 35th Division, with the exception of the 60th Field Artillery Brigade and the ambulance section of the sanitary train, was relieved by the 1st Division, the relief being successfully accomplished with no loss. The artillery was ordered relieved by the 1st Division Artillery on the night of October 1–2, and the ambulance section of the sanitary train was relieved on the 2d. The organizations of the divisions were assembled and marched to the area south of Vavincourt, which was reached by all elements of the division on October 7.³³

MEDICAL DEPARTMENT ACTIVITIES

When, on September 20–21, the 35th Division relieved the French 73d Division, its sanitary train transportation consisted of 12 motor ambulances (8 G. M. C. and 4 Fords) and 12 animal-drawn ambulances. Twenty-two trucks were all that could be spared from the divisional pool for the use of the sanitary train, including its supply depot.³⁴ On September 21, Ambulance Company No. 138 had established a dressing station, which also functioned as a triage, at Auzeville; a portion of Field Hospital No. 140 had established, near Camp du Wagon, a hospital for sick and wounded, and a section of Field Hospital No. 139 had been set up at the same point to function as a gas

hospital. Ambulance Company No. 140 (animal-drawn) was serving the Artillery.³³ On the 24th, Ambulance Company No. 41, with 8 G. M. C. ambulances and a litter bearer section, joined, and on the 25th United States Army Ambulance Section No. 649 was reported en route to join.³⁴ The medical carts joined their units in the woods, but some were not in time to reach the most advanced battalions and were not permitted to accompany their commands as they advanced, nor would they have been able to keep up with them had they done so. For these reasons some of the battalions were out of contact with their regular supplies from September 15 until after this action.³⁴ Medical Department personnel with regiments therefore went forward with such supplies as they could carry in empty gas-mask cases, grenade sacks, and other containers.³⁶

At 6 p. m. on September 25, orders were issued directing the sanitary train to proceed immediately to the ravine and woods south of Courcelles, on the Auzeville—Aubreville road. Personnel of Ambulance Company No. 138, with attached triage teams and triage equipment, were ordered to the same front, but instructed to be ready to function at Neuville at 6.30 a. m., September 26. Ambulance Company No. 139, using such transportation as Ambulance Company No. 41 could furnish, was to be prepared to move forward with litter squads and dressing station at 5 a. m. Ambulance Company No. 137, with the transport section of Ambulance Company No. 140, after proceeding to Courcelles, was to be prepared at 6.30 a. m. to send forward its litter-bearer and dressing-station section. The rest of the ambulance section was to move to Courcelles as soon as transportation became available. By the same order the field hospitals were disposed as follows:³⁴

Field Hospitals No. 138 and No. 139, at Depot du Wagon, cleared into evacuation hospitals or into Field Hospital No. 140, and the latter was closed and prepared to move to Courcelles by 6 a. m., September 26. All field hospitals were to move as soon as transportation became available, and the medical supply unit was to open at Neuville on September 26.³⁷ Because of road conditions there was grave doubt whether the movement could be made in the time allowed. With his office personnel the division surgeon moved to the dressing station at Auzeville, while his assistant represented him at division headquarters. Division ambulance companies were placed in immediate control of the collecting and evacuating of patients in front of the triage, and the commanding officer of the sanitary train was charged with all Medical Department activities in rear of it.³⁸

The sanitary train experienced considerable delay in its forward movement, but early in the morning of September 26 Ambulance Company No. 138 (the triage formation) had passed Courcelles and moved to a point just west of Neuville, where it began operations.³⁹ The transport section of this company entered the already congested stream of traffic on the Neuville—Varennnes road, and a few ambulances were directed to make every effort to get through the wood roads northeast of Neuville and remove the wounded from the vicinity of Vauquois Hill. Ambulance Company No. 137, arriving at Courcelles without transportation, sent part of its personnel to operate

a collecting station for slightly wounded at Neuville and a detachment of 2 officers and 50 men to establish a dressing station at Boureuilles and to collect wounded between that point and Vauquois Hill.³⁹ Ambulance Company No. 139, also without transportation, covered the right of the sector, established collecting stations at Hill 290, on the southern slope of Vauquois Hill, at Boureuilles, and later on that same day (September 26) at Cheppy.⁴⁰ Ambulance Company No. 140 (animal drawn) sent details to assist the shock, gas, surgical, splint, and neurologic teams at the triage, and by the use of an unindicated, circuitous route six of its ambulances reached Cheppy during the evening of the 26th.⁴⁰ The remainder of its vehicles cleared the blockaded sector between the trench lines and Cotes de Forimont.⁴⁰ United States Army Ambulance Service Section No. 649 sent its 20 Ford ambulances to make contact with the several collecting stations, while Ambulance Company No. 41 was ordered to establish dressing stations at Boureuilles and, if possible, at Varennes.⁴⁰ United States Army Ambulance Service Section No. 520, assigned to the division by the corps surgeon, operated between the triage and the evacuation hospitals.⁴¹ The sanitary train, exclusive of the last-mentioned unit, consisted of 19 G. M. C. ambulances, 12 animal-drawn ambulances, 20 serviceable and 3 unserviceable Ford ambulances, and 22 trucks.⁴¹ Because of the shortage of the last-mentioned vehicles it was necessary to move the field hospitals in relays. All arrived at Courcelles by morning of the 27th, where they were held in reserve, except that a section of Field Hospital No. 140 was sent to Neuville to operate as a medical and rest annex for the triage. Fortunately the hospitals were not needed during the first day of the operation, for there was no road across the trench lines during the first 30 hours after the attack, and animal-drawn ambulances were the only vehicles at this time upon whose operation any reliance could be placed.⁴¹ By evening of the 26th surgeons with combat troops were informed that supplies were being sent to Boureuilles and Cheppy, whence they were to be carried to the front by ambulances, pack mules, and litter bearers. These officers were enjoined to collect their wounded in groups, preferably on roads, and to notify the division surgeon of their location. By nightfall there were 38 wounded remaining on the field near Vauquois and 400 near Cheppy. Nearly all the disabled were collected in groups.⁴²

Ambulance Company No. 138, at Neuville, was relieved by Field Hospital No. 138, at 2 p. m. on September 27, and was held in reserve, prepared for an advance.⁴³ By afternoon the wounded had begun to reach the triage, animal-drawn vehicles worked around Vauquois, and a few Ford cars had reached Cheppy, and the G. M. C. vehicles the mine crater near Boureuilles.⁴³ Meanwhile the other companies were moving forward. Ambulance Company No. 137, continuing its dressing station at Boureuilles, established relay stations between that town and Vauquois and thoroughly cleared this area.⁴⁴ Ambulance Company No. 139 moved its station to Cheppy, and Ambulance Company No. 140 sent pack mules and ambulances to replenish supplies and to assist the other companies, especially the 138th until that closed, holding the main body of the company, however, in reserve.⁴⁴ United States Army

Ambulance Service Section No. 649 brought in wounded (sometimes from the regimental aid stations) to the triage, while United States Army Ambulance Service Section No. 520 worked both in front of the triage and in rear of it.⁴⁴

The section of Field Hospital No. 140, established as a rest and medical treatment station at Neuville, continued to operate there in this capacity after Field Hospital No. 138 had relieved Ambulance Company No. 138, which conducted the triage, until the afternoon of September 27. At this point a considerable number of men claiming to have been shell shocked or gassed sought treatment, and, though every effort was made to return suitable cases to the front, many had to be sent to the rear to relieve congestion. In the rush of cases it was not possible to sort them with definitive exactitude, and those cases in which there was question were given the benefit of the doubt. Field Hospitals No. 137 and No. 139 were held in reserve, but their personnel was distributed as required among the other hospitals.⁴⁵

Regimental detachments were still being supplied by ambulances returning to the front. Every ambulance carried supplies—dressings, blankets, and all the litters that could be spared. Infantry and machine-gun units were supplied during the night. Artillery regiments were able to carry their own medical supplies and had no difficulty.⁴⁶ Trucks were sent to the rear for supplies to meet the constant drain. Road congestion continued well into the afternoon of the 27th, by which time a new road around the mine crater near Boureuilles had been completed. At 4 p. m. 4 mule-drawn ambulances arrived at Neuville from Cheppy in six hours, but the Vauquois—Cheppy road was still impassable to motors. During the afternoon all ambulance company sections pertaining to the division were working in advance of the field hospitals, for the corps surgeon had sent two corps ambulance sections to clear these hospitals. By 5 o'clock congestion on the main road (Varennes—Neuville) began to lessen, collecting stations were being satisfactorily cleared, and adequate supplies were going forward. Ambulance Company No. 41 had established a dressing station at the crossroads east of Varennes, the 139th Company had a station at Cheppy, while the 137th was still operating at Boureuilles.⁴⁷

On the morning of September 28 Ambulance Company No. 137 moved to Cheppy, established a dressing station in German dugouts on the south side of the town, and by 3 o'clock had received more than 300 cases. At 3 p. m., under heavy artillery fire, this company moved to Charpentry and established a station in a building, four barns, and four dugouts. This soon was overflowing with patients. Evacuation was reasonably prompt, but the road was so congested that 24 hours was the estimated time required in getting patients to Neuville, distant 13 km. (about 8 miles).⁴⁸

All trucks going through to Neuville were loaded with such wounded as could endure 24 hours of this kind of transportation, but the greater number, including all seriously wounded, were relayed to Cheppy.⁴⁸

Ambulance Company No. 138, with triage equipment and accompanied by the division surgeon, left Neuville at 8 a. m. September 28 for Cheppy, estab-

lishing the triage there and relieving sections of Ambulance Companies No. 137 and No. 139, which were then sent forward to Charpentry. The triage was located in dugouts formerly occupied by the dressing station, where 250 wounded men had been collected. Others continued to pour in, from the 91st as well as from the 35th Division. Stations were assigned to the special departments of the triage, in shacks and in the open, while dugouts and tents were reserved for the wounded. The division surgeon's office, the admission and the antitetanic service sections, and the supply, salvage, and evacuation services were established in tents in front of the dugouts. So great was the number of wounded that it was not possible to keep records, and the utmost efforts were necessary to prevent complete overwhelming of the triage. Ambulant cases were sent back on foot, and all returning vehicles were utilized as well as all ambulances which could be spared from the front. This station worked unremittingly day and night until the division was withdrawn.⁴⁹

Moving forward from Cheppy and withdrawing its station from Very, Ambulance Company No. 139 concentrated at Charpentry, whence its dressing station and litter-bearer section moved to Baulny, on the afternoon of the 28th, to establish a collecting station.⁵⁰

On the morning of the same day Ambulance Company No. 140 moved up to Charpentry and established a dressing station at that place. Animal-drawn ambulances were concentrated there, working forward to the battalion and regimental aid stations. Ambulance Company No. 41 maintained its dressing station east of Varennes, chiefly as a relay station and for the slightly wounded coming down from Charpentry, but it also cared for other slightly wounded and for ambulant patients. Its litter-bearer personnel was divided, one section covering the territory between Cheppy and Charpentry, while another section beyond Charpentry served the troops near Baulny and Bois Montrebeau. The transport sections of Ambulance Companies No. 138 and No. 41 worked between the stations at Cheppy and Charpentry and the field hospitals at Neuville. United States Army Ambulance Service Section No. 520 worked on the same route, while No. 649 worked almost exclusively between Charpentry and the triage at Cheppy. Trucks were also utilized for wounded, both in front and in rear of Neuville.⁵¹

Field Hospital No. 138 had continued to operate at Neuville, where, by evening of September 28, 743 cases from the 35th Division and 417 from other divisions had been received.⁵¹ All four field hospitals were in service here by evening of that date, operating in effect as a unit.⁵² A section of Field Hospital No. 140, consisting of 2 officers and 20 enlisted men, was sent to Cheppy to operate a rest and medical station in connection with the triage. As German dugouts faced in the wrong direction, tents were pitched in the valley east of Field Hospital No. 138. Near-by batteries drew heavy German artillery fire, but Medical Department units received no direct hits. By evening conditions appeared serious, for losses had been heavy and all the troops were becoming exhausted. Medical work continued throughout the night. Roads were by this time fairly clear, though the average time necessary for

a round trip from Cheppy to Neuville, a distance of 8.5 km. (5.2 miles), was 24 hours.⁵² From this time the demands for supplies were urgent.

On September 29 Ambulance Company No. 137, which continued to operate its dressing station at Charpentry, at one time had 514 patients lying in the open in addition to those being cared for in buildings and dugouts. It was congested, under constant fire, and its personnel almost exhausted. In the afternoon three regimental aid stations having moved back to Charpentry, part of the company was sent back to Varennes for a rest. The division was then withdrawing, and it was thought that the most advanced dressing stations would be at Cheppy and Varennes.⁵³



FIG. 66.—Dressing station operated at Cheppy, France, September 29, 1918

Ambulance Company No. 139 had followed the advancing troops in the morning September 29, establishing an advance station at Chaudron Ferme and another a little in the rear, toward Baulny. When troops returned, these detachments came back to Charpentry and brought most of their wounded with them.⁵⁴ At 3 p. m. the company was ordered back to Varennes for rest, but at 5 o'clock a detachment of the least exhausted officers and men returned to Charpentry. Ambulance Company No. 140 remained there during the day, moving to Varennes in the evening. Animal-drawn ambulances continued to evacuate from the front, under artillery fire, while the troops were retiring and reached many groups of wounded in places inaccessible to motors.⁵⁵ Ambulance Company No. 41 continued to operate at Varennes, its litter-bearer section working out of Charpentry and Baulny, while its vehicles,

with those of Ambulance Companies No. 138 and No. 520, worked between Charpentry, Cheppy, Varennes, and Neuville.⁵⁵ Thirty French trucks found at Varennes were used to evacuate the wounded.⁵⁵

Ambulance Company No. 138 continued to operate the always overflowing triage at Cheppy. Dugouts for 200 cases of psychoneurosis, exhaustion, lightly gassed, and similar cases were prepared by the Engineer regiment. These filled rapidly, and at noon the station had nearly 1,000 patients. All buildings, tents, and dugouts were full, the surrounding ground was covered with litter cases, and three lines of litter cases extended along the road for 109 meters (a hundred yards). Extraordinary efforts were made to get these casualties to the rear. All possible trucks were seized and all available ambulances used. A column of walking wounded, 250 in number, was organized. At least 25 men totally unfit to walk volunteered for this column and had to be taken out. Between 3 and 5 o'clock more than 750 patients were evacuated to Neuville, and at the same time upward of 500 were sent from Charpentry to Neuville. Congestion was relieved, and thereafter evacuations more than kept pace with admissions. United States Army Ambulance Service Section No. 649 continued the use of its light ambulances, taking patients from Charpentry and Baulny to the station at Cheppy.⁵⁶

During the 24 hours ending at noon of September 29 the field hospital group at Neuville received 1,142 casualties from the 35th Division and 353 from other divisions, a total of 1,495 patients.⁵⁷

On September 30 Ambulance Companies No. 137, No. 139, and No. 140 had detachments of their litter-bearer sections working in front of the dressing station at Charpentry, the remainder of their personnel being at rest in Neuville and Boureuilles. Ambulances were kept going night and day, and casualties continued to reach the dressing station in large numbers. It was estimated that more than 3,000 men were fed here and sent back to the line, in addition to some 2,500 casualties received. On the morning of the 30th detachments from Ambulance Company No. 139, served by eight mule-drawn ambulances, went over the open ground to collect the remaining wounded. Those at Charpentry were evacuated to Cheppy and Neuville. By 11 p. m. Cheppy was reported cleared, and the only wounded at the front were those collected at Charpentry, about 200 litter cases.⁵⁸ At 11.30 trucks were available for their removal, while the field in front was reported clear. The field hospitals remained at Neuville receiving, during the 24 hours ending at noon of September 30, 1,035 patients from the 35th Division and 288 from other divisions. The church was used for an overflow; at one time when rear roads were blocked more than 1,500 patients accumulated at this town. By midnight the field hospitals were fairly cleared, 16 litter cases remaining, together with 400 cases of exhaustion, neurosis, and gassing, most of them suitable for transfer to the corps rest camp which was to be opened the next day.⁵⁹

On October 1 the sanitary train of the 1st Division took over the dressing station at Charpentry and the triage at Cheppy. Medical Department units of the 35th Division gradually being relieved and sent for rest to Varennes,

Field hospitals continued to operate and were reported to have received, during the 24 hours ending October 1, 1,296 patients from the 35th Division and 493 from other divisions. Of the total admitted from the 35th Division during this action, about 480 were returned to duty and 250 sent to the rest camp.⁶⁰

On October 2 the station at Charpentry was bombarded with high-explosive and gas shells, causing 74 casualties and 3 deaths among the personnel of Ambulance Company No. 137. During the afternoon this company, with detachments from the other ambulance companies belonging to the division, was returned to Neuville and Varennes, while Ambulance Company No. 41 returned to the First Corps sanitary train.⁶¹

The triage report shows total admissions as follows:

35th Division-----	4,623	French-----	21	
28th Division-----	443	German-----	72	
37th Division-----	87			93
91st Division-----	798			
Miscellaneous units-----	257			6,301

It was estimated that some 500 wounded from the 35th Division were cared for by other divisions.⁶¹

Of the 1,359 patients diagnosed as "gassed," more than 250 were so diagnosed definitely enough to warrant evacuation. Some sent to the triage were slightly gassed, but a number admitted with the diagnosis of gassed were merely exhausted and not actual gas cases.⁶²

THE 1ST DIVISION

After participating in the St. Mihiel operation, the 1st Division was withdrawn to Nonsard as reserve of the Fourth Army Corps. On September 23 it was assembled in the area of Benoitte Vaux as a part of the Third Army Corps. While in this area the division was assigned as reserve of the First Army. On the night of September 27-28 the division moved to the region of Blercourt-Nixeville; thence to Neuville. On the night of September 30-October 1 it relieved the 35th Division (less artillery and sanitary train) and part of the 327th Infantry, 82d Division, on a front extending from a point near l'Esperance to a point Bois Communal de Baulny. The 1st Division was designated as the right division of the First Army Corps, with the 28th Division on its left and the 91st Division, Fifth Army Corps, on its right.^{63, 64}

The 1st Division did not make a general attack until October 4. However, during the period October 1-4 it was subject to much harassing enemy artillery fire.⁶⁴

MEDICAL DEPARTMENT ACTIVITIES

The sanitary train was encamped in the vicinity of Nubecourt until about September 27, when it moved to woods near Julvecourt. It remained at the latter place two days and then advanced to Charpentry.⁶⁵

The ambulance section of the sanitary train arrived in the divisional sector early on the morning of October 1, and its units were disposed as follows: Ambulance Company No. 3 established a dressing station at Charpenry, where Ambulance Company No. 12 was held in reserve, while Ambulance Companies No. 2 and No. 13 were held in reserve at Varennes, except that the latter company established at that point a dressing station for the slightly wounded. United States Army Ambulance Service Section No. 649, which had been attached to the 35th Division, here rejoined the 1st



FIG. 67.—Ambulance Company No. 13 and Field Hospital No. 3, 1st Division, on the road at Very, Meuse, France, October 3, 1918

Division. Field Hospitals No. 3 and No. 12 were located in German dugouts at Cheppy, the former conducting the triage and treating gassed patients, while the latter received the sick and nontransportable wounded. Field Hospital No. 3 also treated, after operation, shock patients who were not able to endure transportation.⁶⁵

THE 92D DIVISION

On September 22, 1918, the 92d Division (less the 368th Infantry and an Artillery brigade) constituted the reserve of the First Army Corps in the Meuse-Argonne operation, and was assembled in the woods northwest of Clermont. The 368th Infantry formed a part of the combat liaison between the

French Fourth Army and the American First Army, September 26 to October 4, 1918. On September 29 the 92d Division (less one Infantry brigade, the Artillery, and the Engineers) was placed at the disposal of the French 38th Army Corps, operating in the Argonne Forest, where it formed the reserve of the French 1st Light Infantry Division. On October 3 it was relieved and placed at the disposal of the American First Army and was assigned to the First Corps Reserve. On October 4 it was assigned to the Fourth Corps and proceeded to the vicinity of Toul.⁶⁶

MEDICAL DEPARTMENT ACTIVITIES

After the 92d Division arrived at Triaucourt, September 22, the rear echelon of its headquarters, including the division surgeon's office, remained there, the sanitary train camping in the woods just north of the road from Les Islettes to Clermont. There were but few casualties, as most of the division was in reserve during this phase of the operation. No record is available of the operations of the Medical Department at this time other than the statement that an evacuation plan had been formulated and was utilized. Though the sanitary train had neither ambulances nor trucks assigned to it, it appeared necessary that matériel of the train should be made immediately available in view of the anticipated activity of the division. It was therefore brought up from the railhead to Ste. Meneshould, and Field Hospital No. 366 was established there as a triage.⁶⁷

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CHAPTER XXII

FIRST PHASE—Continued

THE FIFTH CORPS (91ST, 37TH, 79TH, AND 3D DIVISIONS, WITH THE 32D DIVISION IN RESERVE)

The Fifth Corps, to the right of the First Corps and to the left of the Third Corps, formed the center of the First Army and comprised the following divisions in line, from left to right: 91st, 37th, and 79th, with the 32d Division in reserve.¹

The objectives of the corps were published in Field Order No. 31, September 21, 1918, parts of which read as follows:

(G-3 No. 26-5)

FIFTH ARMY CORPS, AMERICAN E. F.,
21 September, 1918—8.00 o'clock.

Field Orders
No. 31

PART I

Maps: (Argonne special) 1:50,000.

1. (a) The enemy holds the front from the Meuse to the Aisne with about five divisions.

(b) The allied armies attack on the front from the Meuse (exclusive) to the Suippe (exclusive).

1. Direction, toward Mezieres.

2. Mission, to force the enemy from the line of the Aisne.

3. Objectives, (first) Dun-sur-Meuse—Grandpre—Challerange; (second) Somme Py—Stenay—Le Chesne—Attigny—Rethel.

* * * * *

(c) The 1st American Army attacks from the Meuse (exclusive) to La Harazee (exclusive) in the direction of Buzancy-Stonne.

(f) The 3d Army Corps (U. S.), on the right, from the Meuse (exclusive) to Malancourt (exclusive), protects the right of the American Army, and assists the advance of the 5th Army Corps by turning Montfaucon and later by turning the section of the hostile 2d position within the zone of the 5th Army Corps. It advances in conjunction with the 5th Army Corps.

(g) The 1st Army Corps, on the left, assists the advance of the 5th Army Corps by cutting off hostile artillery fire and observation from the eastern edge of the Foret d'Argonne. It clears up the forest of Argonne and advances to the American Army objective in conjunction with the 5th Army Corps.

2. The 5th Army Corps attacks at "H" hour on "D" day on the front Malancourt (inclusive)—Vauquois (exclusive).

* * * * *

(b) Direction: Cierges—Remonville.

* * * * *

3. (a) The 79th Division.

* * * * *

(2) The 79th Division * * * will advance rapidly to the corps objective (see map). It will seize in succession Malancourt, Montfaucon, and Nantillois. It will assist

the 37th Division by turning the Bois de Montfaucon. The 37th Division and the 79th Division will mutually assist each other in the capture of Montfaucon.

(b) The 37th Division.

* * * * *

(2) The 37th Division * * * by proper echelonment in depth, will assist the 79th Division in the turning of the Bois de Montfaucon and in the capture of Montfaucon. It will aid the 91st Division in clearing up the group of woods, viz, Bois de Septsarges—Bethincourt—Cheppy—Malancourt—Very and Chehemine. It will seize Hill 261, and the village of Ivoir, pressing forward without delay to the corps objective.

(c) The 91st Division.

* * * * *

(2) The 91st Division will * * * by its advance in conjunction with the 35th Division, it will outflank the Bois de Cheppy and the Bois de Very. By its advance in conjunction with the 37th Division, it will assist the latter in mopping up the group of woods, viz, Bois de Septsarges—Bethincourt—Cheppy—Malancourt—Very—Chehemine. * * *

(d) The divisions will push forward to the "corps objective line" (as shown on map), rendering mutual support, but not delaying their own advance by waiting for each other. After reaching line the corps advance will be continued to the American Army objective without waiting for the advance of the corps on the right and left. The advance will be pushed by all divisions with the greatest vigor. The American Army objective will be reached during the afternoon of "D" day. The penetration thus made in the hostile third line will be exploited during the same night. Reconnaissances of at least one regiment and one battalion of Field Artillery will be sent forward by each division. Further advances will be regulated by Army Headquarters.

* * * * *

9. Axis of liaison.

5th Army Corps: Ville-sur-Cousances—Brocourt—Recicourt—Avocourt—Montfaucon—Cierges—Romagne-sous-Montfaucon—Andevanne—Nouart.

79th Division: Cote 309—northeast edge of Bois d'Esnes—crossroad 3998—eastern exit of Esnes—Malancourt—Montfaucon—Nantillois—Cunel—Bantherville—Andevanne—Tailly.

37th Division: Follows 5th Corps axis of liaison to Bantheville; thence Remonville—Barricourt—Nouart.

91st Division: P. C. 91st Division—Cote 290 (coordinates 308.30:268.30)—Mt. des Allieux—Boyau de Mossoul—La Neuve Grange—Bridge 198—Very—Epinonville—Gesnes—Landres et St. Georges—Bayonville—Fosse.

10 P. C.'s.

79th Division: Near road exit eastern Bois de Lambechamp.

37th Division: Verrieres Ferme.

91st Division: Near Bertrame Ferme.

32d Division: Waly.

5th Corps: Ville-sur-Cousances.

* * * * *

On September 26, at 5.30 a. m., the infantry advance of the corps was made under the protection of a rolling barrage. The 91st Division progressed steadily, and by noon their left had occupied the left portion of their objective, but their line sagged toward the east on the other flank. The center (37th Division) and the right (79th Division) were checked in their endeavor to reach the corps objective, the advance of the 79th Division being hindered by machine-gun fire during the entire afternoon. The 37th Division progressed very slowly through the Bois de Montfaucon, and at midnight their line ran approximately along the northern edge of Bois de Montfaucon, thence to a point approximately 1.5 km. (0.9 mile) south of Ivoir. From here the line

of the 91st Division extended southwestwardly to about one-half kilometer (0.3 mile) north of Very.^{2, 3}

A renewal of the attack was ordered for 5.30 a. m. on September 27. The divisions were ordered to advance independently of each other, to the combined army first-phase line, no change being made in the zones of action.⁴ At noon the 91st Division on the left was about 1 km. (0.6 mile) in advance of the left half of their portion of the corps objective; running east, their line skirted south of Epinonville and then bent down in the direction of Ivoiry. The 37th Division held positions, generally speaking, about 1 km. (0.6 mile) south of Ivoiry and running in an irregular line northeast of this point. The 79th Division occupied a line about one-half kilometer (0.3 mile) beyond Montfaucon, which it occupied shortly before noon.²

During the afternoon the forward movement of the 37th and 79th Divisions commenced. The 37th met resistance from the direction of Bois de Beuge and artillery fire from the direction of Cierges.² At midnight the corps line was practically as follows: From the southwest corner of the Bois de Septsarges—southwest to the Epinonville—Montfaucon road, thence south of Ivoiry and Epinonville, thence southwest across the Epinonville—Eclisfontaine road, thence to a point about 2 km. (1.2 miles) southwest of Epinonville.^{3, 5}

On September 28 the corps attacked at 7 a. m.⁶ Up to noon the town of Eclisfontaine was reported taken by the 91st Division, and the leading elements of the 37th Division were in the Bois de Beuge and the Bois Emont. At 2.55 p. m. the leading elements of the 79th Division were advancing on Bois des Ogons and Bois du Fays, and leading elements of the 37th Division were along the Cierges—Nantillois road. At 7 p. m. the corps line was approximately as follows: From a point about 1.5 km. (0.9 mile) northwest of Eclisfontaine, northeastwardly, to a point about one-half kilometer (0.3 mile) northeast of Nantillois.^{2, 3}

On the morning of September 29 the attack was continued at 7 a. m. Because of strong enemy resistance our troops made slow progress; and except for a slight advance of the 91st Division, the corps line remained practically that of the preceding day.²

On September 30 the attack was not continued during the day. Present lines were held and every effort was made to prepare for a resumption of the attack on the following day.⁷ During the day the relief of the 37th and 79th Divisions was begun by the 32d and 3d Divisions, respectively. The relief was entirely completed during the night of September 30–October 1.⁸

During the period October 1–3 no attack was made by the corps.² The following readjustment of the corps front was directed to be completed by midnight October 3: The 3d Division to occupy the front from Nantillois—Cunel road (exclusive) to Cierges (inclusive); the 32d Division to occupy the front from Cierges (exclusive) to the left boundary of the corps. The 91st Division (less the 58th Field Artillery Brigade) was relieved in the front line by the 32d Division and assembled in reserve in the Bois de Very and Bois de Cheppy.⁹

MEDICAL DEPARTMENT ACTIVITIES

The corps surgeon's office had been established at Ville-sur-Cousances, on September 18, and, in addition to its authorized force, had attached to it one consultant each in medicine, surgery, psychiatry, urology, and orthopedics. Attached to the corps were United States Army Ambulance Service Sections, Nos. 542, 602, 603, 604, and French sections No. 84 and No. 131. There was no other corps sanitary train or transportation except one touring car from the corps pool, which it was frequently impossible to obtain. About October 17 a touring car was assigned to the corps surgeon's office.¹⁰

Army units serving the corps were as follows: 3 evacuation hospitals, 1 mobile hospital, 1 gas hospital, 1 neurological hospital, 1 contagious disease hospital, 1 medical supply dump, and 1 advanced medical supply depot.¹⁰

The following general plan for evacuation of sick and wounded was published by the corps on September 24:¹¹

1. Divisional organizations.

(a) Battalion aid posts, relays of litter bearers, and regimental aid posts will be established by the regimental surgeons under the supervision of the division surgeon.

(b) Station for slightly wounded will be established by the division surgeon of the division in reserve at Jubecourt. Those able to return to duty will be returned at once to the line. All others will be sent to Evacuation Hospital No. 9, at Vaubecourt.

(c) Division hospitals, to which all casualties and sick will be transported by the division service, will be established by division surgeons as follows:

(1) One field hospital for sorting cases (triage) and one for gassed cases:

37th Division (to be designated later).

79th Division, Les Clairs Chenes.

91st Division (to be designated later).

All cases except gassed will pass through triage, where they will be carefully sorted and sent to appropriate hospitals to prevent the necessity for subsequent evacuation by surgical and special hospitals. Gassed cases will not pass through triage hospital. Will receive only preliminary treatment in divisional gas hospital, and will be evacuated as soon as possible to gas hospital at Julvecourt.

(2) One field hospital for ordinary sick (except contagious) will be established at Ville-sur-Cousances by the division surgeon of the division in reserve.

2. Evacuation—all troops:

(a) Severely wounded, Mobile Hospital No. 1, at Les Clairs Chenes; Evacuation Hospital No 10, at Froidos; and No. 3, at Fleury-sur-Aire.

(b) Slightly wounded, Evacuation Hospital No. 9, at Vaubecourt.

(c) Gassed, Corps Gas Hospital at Julvecourt.

(d) Psychoneurotic cases, P. N. hospital at Nubecourt.

(e) Contagious, Evacuation Hospital No. 9, at Vaubecourt.

(f) Ordinary sick, skin, and venereal, Evacuation Hospital No. 9, at Vaubecourt.

(g) All evacuation for corps troops will be to the nearest medical unit.

(h) The evacuation service will evacuate from divisional field hospitals to the rear.

In anticipation of the operation the following preparations had been made: The triage and gas hospitals of the 79th Division were located at Les Clairs Chenes; those of the 37th and 91st Divisions at Brabant. A station for the slightly wounded was located at Jubecourt by the surgeon of the division in reserve. Men who could return to duty were ordered to be returned at once; others were to be sent to Evacuation Hospital No. 9, at Vaubecourt. One field hospital of the division in reserve was established at Ville-sur-Cousances for

the sick (except contagious cases) of the corps. (A serious epidemic of influenza raged in the 79th Division.) Directions were given that all cases possible be held and treated in division hospitals, but as a matter of fact the majority of patients had to be evacuated to Ville-sur-Cousances or Souilly.¹⁰

Casualties among corps troops were to be evacuated to the nearest hospital. Gassed patients, it was ordered, were not to be sent through the triage, but after preliminary treatment in the divisional gas hospital, were to be sent to that of the corps at Julvecourt.¹²

The following memorandum was issued by the corps on September 24:¹³

1. G-4 of the 1st Army requires from the corps surgeon a daily telegraphic report from noon to noon of wounded, other injuries, gassed, and sick.

Beginning at "D" day and until further orders from this office, division surgeons will prepare and have ready at 4 p. m. daily at headquarters, field hospitals, for collection by corps surgeon's courier, the following numerical report in lieu of consolidated daily field report of patients. [This latter report has called for an itemized numerical statement of those wounded, otherwise injured, gassed, or sick, pertaining to the division, or (separately) to other troops.]

Surgeons of nondivisional corps will submit the above report either direct to this office or to nearest field hospital headquarters by 4 p. m. daily of cases in their organization, *only*, which have been evacuated to an Army hospital without passing through a divisional hospital of the 5th Corps.

2. Division surgeons will report at once present location of field hospitals by number, and any change which may be made in the future.

3. Division surgeons of the 37th, 79th, and 91st Divisions will each designate a medical officer of good judgment who will push forward in rear of advancing troops and report to him as soon as practicable upon a suitable location for triage (to include non-transportable) and gas hospitals, in about the horizontal coordinate of Montfaucon. This report as soon received will be communicated to this office. No field hospital will be moved without the approval of the corps surgeon.

4. The officer in charge of the evacuation of sick and wounded of the corps and commanding officers of evacuation ambulance companies will take orders for movements of ambulances from him or the corps surgeon or his representative. The corps surgeon's office is at headquarters, 5th Army Corps.

5. The divisional triages of the 37th and 91st Divisions will be prepared to handle nontransportable cases. At the triage of the 79th Division, nontransportable and severely wounded cases will be transferred to Mobile Hospital No. 1.

This memorandum was later amended to read, "Report will be sent by returning ambulance, by motor cycle, or by phone," and the following paragraph was added:¹³

For division surgeons:

In addition to the above, a second report will accompany it by courier and by phone as follows:

(a) Number of evacuable patients in division field hospitals at time report is made (the hour to be stated).

(b) Approximate number of casualties expected to arrive within following 12 hours. To be based on reports from the front.

After the advance began on September 26, and it was found that it proceeded rapidly, roads, especially in the region of Esnes, Malancourt, Montfaucon, and Avocourt, were almost impassable. In several instances 50 to 60 hours elapsed between the time when a man was wounded and when he arrived at Mobile Hospital No. 1, at Les Clairs Chenes. French Ambulance Section

No. 131 was on the road to Montfaucon for 26 hours without reaching its destination.¹⁰

On September 28 the triage of the 79th Division moved to Malancourt, that of the 91st to La Neuve Grange Ferme on September 29, and on the 30th that of the 37th to Avocourt.

The corps surgeon attempted to push ambulances up to them, but this was an exceedingly difficult operation, because of impassable and blocked roads, and was only partially successful. On September 28 a motor ambulance company of the 32d Division (the corps reserve) was temporarily attached to each of the three divisions in the front line and proved of great assistance. It was recognized that utilizing such reserve units was wrong in principle, generally speaking, but this was considered a great emergency. The division surgeon of the 91st Division was required by his division commander to take station at advance headquarters, from which point it was almost impossible for him to supervise his triage and the evacuation of wounded. The division surgeon of the 79th later moved his triage to Montfaucon, where it was shelled and several patients and some of the enlisted personnel killed or wounded. Fortunately, casualties for this period were relatively light.¹⁰

THE 91ST DIVISION

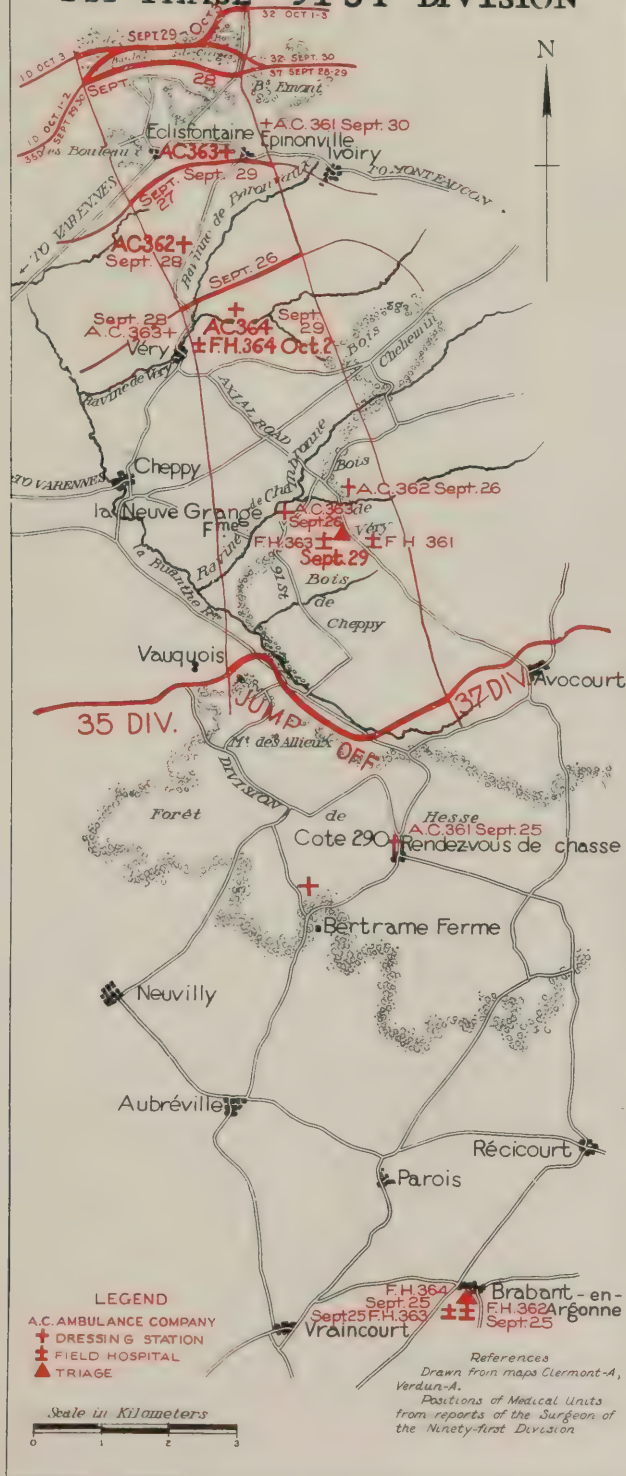
On the night of September 13-14, 1918, the 91st Division moved to the vicinity of Vavin court (Meuse), and then, on the night of September 16-17, it moved to the vicinity of Autrecourt (Meuse). On September 17, the division was assigned to the Fifth Army Corps. It then moved to the Forêt de Hesse, northeast of Neuville.¹⁴

On September 26, the division attacked on a front extending from Vauquois to a point about 2 km. (1.2 miles) southwest of Avocourt.¹⁴ The division occupied the left sector of the Fifth Corps; the 37th Division attacked on its right, and the 35th Division (First Corps) on its left.¹⁵

The zone of action of the division was divided approximately into two equal sectors. The 181st Brigade was assigned to the sector on the right, and the 182d to the sector on the left. The 181st Brigade was formed for attack with its two regiments (each less one battalion) side by side, each regiment having one battalion in the assaulting line. The 182d Brigade was formed with its two regiments (each less one battalion) in column, the leading regiment having one battalion in the assaulting line.¹⁵

The front-line elements of the division left the line of departure at 5.30 a. m., September 26, following closely the rolling barrage when it moved from the hostile front line. A heavy fog lay in the valley of La Baunthe Ruisseau. A smoke screen had been thrown out to cover the advance of the leading elements of the division and to blind the enemy. Both fog and smoke hindered, to some extent, the rapid advance of our troops. In some instances, gaps had not been completely cut by our artillery fire in the enemy wire; this, together with enemy heavy machine-gun fire, checked to some extent the progress of the advance elements of the division. In spite of the obstacles encountered, however, the enemy's defensive system was penetrated to a

MEUSE-ARGONNE
1ST PHASE 91ST DIVISION



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

depth of about 4 km. (2.4 miles) by noon of September 26. The attack was pressed during the entire day, and by 6 p. m. an advance of over 7 km. (4.3 miles) had been made. Patrols from the 181st Brigade entered the town of Epinonville during the afternoon of September 26. The high ground northeast of Vervy, extending toward Montfaucon, was organized for defense and was held during the night of September 26-27.¹⁵

On the morning of September 27, the attack was renewed. The disposition of troops remained the same as on the previous day, with the exception that the 182d Brigade advanced with both Infantry regiments in line. The 181st Brigade encountered strong machine-gun fire in the vicinity of Epinonville. The town itself was occupied several times during the day by our troops, but each time their withdrawal was forced by the enemy's machine-gun and artillery fire. The 182d Brigade succeeded in advancing several hundred yards north of the road running northeast and southwest through Eclisfontaine, and this line was organized for defense on the evening of September 27. Because it was later learned that the road running through Eclisfontaine was to be used as a barrage line by the corps artillery, the elements of the 182d Brigade were withdrawn south of it and a defensive line was established in the evening of September 27, running approximately east and west through a point about 500 meters (545 yards) south of Epinonville. Despite this slight withdrawal, the net gain for the day was approximately 1.5 km. (0.9 mile).¹⁵

On September 28, the division renewed its attack at 8 a. m. Each brigade was disposed with one regiment of infantry in the front line and one in support. The advance progressed slowly throughout the entire day, and everywhere met with increased artillery and machine-gun resistance. The Bois Communal de Baulny, Les Epinettes Bois, and the southern part of Bois Communal de Cierges were seized and held during the day, in the face of considerable opposition. As during the previous day, hostile airplanes constantly appeared over our lines. Hostile artillery was consequently becoming more and more accurate; our losses correspondingly increased.¹⁵

At 7 o'clock on the morning of September 29 the attack was again renewed. The disposition of troops was as on the previous day, with the exception that the supporting regiments passed through the front-line regiments at the hour designated for the attack. The 181st Brigade gained possession of Bois Communal de Cierges and La Grange-aux-Bois Ferme early in the day, but was unable to make further progress on account of the heavy opposition encountered through fire from the village of Cierges. The 182d Brigade progressed as far as the woods immediately north of Tronsol Ferme, where the front-line elements were held up by the enemy's machine-gun and artillery fire from the north and northwest. In the afternoon the infantry attack was launched at 3.40 p. m. On the right the town of Gesnes was taken, and the American First Army objective was reached at 5.30 p. m. On the left the line was advanced to include the Bois de la Morine and Bois de Chene Sec. This ground was gained by the leading regiment of each brigade. Our losses were heavy, especially in the case of the leading elements of the

181st Brigade. At 4 p. m. definite information was received that the front-line elements of the 35th Division had fallen back from the vicinity of Exermont toward Baulny, and that on the right of the 91st Division the Bois Emont had been evacuated by the leading units of the 37th Division. This left both flanks of the 91st Division exposed to attack and made retention of the ground already gained very hazardous. To avoid the possibility of the enemy cutting off our troops by an attack on the front of the salient they occupied, a withdrawal of the elements of the 91st Division already committed to the attack was ordered to be carried out at nightfall. The line running east and west along Bois Communal de Baulny and Bois Communal de Cierges was organized for defense, with advance elements extending as far north as Tronsol Ferme and the woods about 300 meters (327 yards) north of Bois Communal de Cierges.¹⁵

On September 30, in compliance with instructions from the Fifth Army Corps, a line of resistance was established extending through the center of Bois Communal de Cierges, Exermont Ferme, and Cote 231, with a line of observation along the northern edge of Bois Communal de Cierges and Bois Communal de Baulny.¹⁵

From September 30 to October 3, inclusive, the line which this division organized was held in the face of heavy shell fire and under almost constant enemy aerial observation. Though the morale of the troops remained good under the circumstances, these four days of holding the line of resistance without being able to advance caused more casualties and more discomfort to the troops than would have been the case had they been able to continue the attack, accompanied by other troops on both flanks.¹⁵

During the night of October 3-4 the division (less 58th Field Artillery Brigade attached) was relieved from the line by the 66th Brigade of the 32d Division, and it went into bivouac in the Bois de Cheppy and Bois de Very. The last elements (parts of the 363d and 364th Infantry and 348th Machine Gun Battalion) were not relieved until noon, October 4. These last elements held the Bois de Baulny until relieved.¹⁵

MEDICAL DEPARTMENT ACTIVITIES

On September 26 the sanitary train established in Brabant field hospitals for the sick, the gassed, and the wounded. Evacuations from that village were conducted by corps ambulance companies. Reserve ambulance and field hospital companies of the sanitary train were camouflaged and parked on the Paris-Vraincourt road, just south of Parois. Trucks were available for the transport of all the field hospital equipment and the medical supply unit.¹⁶ First reports of the wounded on that day were received by the division surgeon at 10 a. m., and he at once recommended to G-1 that ambulance transport be sent forward to clear the wounded. Owing to orders governing transportation—requiring that recommendation be submitted to a representative of G-1, as traffic regulating officer, before an order could be issued allowing any special transport on the road—it was not until after 2 o'clock that ambulances could go forward to begin evacuation.¹⁶ In accordance with the ad-

FIG. 68. Town of Vervy, used as a dressing station by the 91st Division



ministrative order concerning the action, an advance dressing station had been established in the vicinity of Rendezvous de Chasse, 2 km. (1.2 miles) in the rear of the front line of trenches. Another dressing station for slightly wounded had been established on the left of the divisional sector some distance from the front. Personnel and matériel for these stations were in position on the night of September 24-25. At 12 o'clock, September 26, the division surgeon ordered two additional dressing stations established, one at La Neuve Grange Ferme and the other in the vicinity of Bois de Very.¹⁶ At 4 p. m. Ambulance Companies Nos. 361, 363, and 364 were ordered forward to act as litter bearers, to clear the woods, and to assemble the wounded for evacuation



FIG. 69.—Wounded walking to dressing stations, Argonne Forest, because roads were impassable to ambulances

at dressing stations or along the roads. The light Ford ambulances of United States Army Ambulance Service Sections No. 593 and No. 640 were energetic and persistent in clearing the wounded.¹⁶

On September 29 the division commander gave orders that field hospitals be established in Very, and Field Hospitals No. 361 and No. 363 were moved from Brabant to the crossroads 1 km. (0.6 mile) southeast of Very, which at that time was being shelled by the enemy.¹⁶ Shells were falling also in the vicinity of sanitary train trucks standing near these crossroads. On representation of the division surgeon that the proposed location was too near the front line for the establishment of field hospitals, the chief of staff ordered their establishment at another point. Field Hospital No. 361, as triage, with a

surgical operating unit attached, and Field Hospital No. 363, acting as medical and gas hospital, were established on the afternoon of September 29 in Bois de Cheppy, near La Neuve Grange Ferme on the Avocourt—Very road, 3 km. (1.8 miles) from Avocourt. During the night of September 29–30 about 200 patients were admitted to this hospital—about 6 km. (3.7 miles) from the front line.¹⁶

Evacuation of wounded was seriously hampered by road conditions. During the nights of September 30 and October 1, because of slow evacuation, the field hospitals in Bois de Cheppy were taxed to their utmost to care for the wounded. Evacuation from field hospitals on those two dates was difficult. Many patients were evacuated directly from dressing stations, on returning ammunition trucks of the 91st Division, through Avocourt and the areas of neighboring divisions, to evacuation hospitals in Froidos and Fleury. In addition, many wounded of the division were sent to field hospitals of the 35th Division, on the left, in Cheppy.¹⁷ The axial road of the 91st Division from Very through the Bois de Cheppy to Avocourt was congested at all times, for traffic of three divisions of the Fifth Corps went through Avocourt on a one-way road, with resulting delay. Ambulances were held within this congested section for 12 hours and longer before being permitted to pass with their patients to the rear, despite the protests of division surgeon and commanding officer of the sanitary train made to G-1 and to the motor transport officer of the 91st Division, who controlled traffic of the division over the axial road. To make the trip from field hospitals in Bois de Cheppy to the evacuation hospital in Froidos and return took in some instances 24 hours for a round trip of 50 km. (31 miles).¹⁷

On October 1 the division surgeon moved to the advance division post of command at Epinonville from the rear echelon at Cote 290 in Foret de Hesse. Here the assistant division surgeon was wounded and the automobile assigned to the division surgeon destroyed by enemy shell fire, with loss of some office records and property.¹⁷

The location of ambulance company dressing stations on October 1 was as follows:

No. 361, held in reserve at Epinonville.

No. 362, 1½ km. (0.9 mile) from Very on Very—Epinonville, 3 km. (1.8 miles) from front line.

No. 363, at Epinonville, on road leading to Eclisfontaine, 1½ km. (0.9 mile) from front line.

No. 364, in Very, 6 km. (3.7 miles) from front line.¹⁷

On October 2, Field Hospital No. 364 was established in Very and remained there until the 4th, when the division was relieved by the 32d Division.¹⁷

On being relieved, while the troops were tired, their morale was excellent, though practically all were suffering from diarrhea. During the offensive about 700 cases were evacuated for this cause out of a total of 4,800 men tagged by surgeons attached to line organizations of the division. To a small extent the disease had been present from the time that the troops were in the training area. During the movement toward the battle front, sanitary conditions were

never satisfactory, and with decrease in safeguards incident to the advance there was a marked tendency to the spread of diarrhea.¹⁷

Under road conditions existing during the first four days of the advance the removal of the wounded had been as good as was possible. It is believed that in an advance of this sort field hospitals should be established on the enemy side of the natural line of resistance (in this case No Man's Land) as soon as it is possible to place them. This natural line of resistance is the site of subsequent traffic jams, and facilities should be available here for treatment of the majority of the wounded. Many evacuations were accomplished by returning trucks direct from ambulance dressing stations through Cheppy to the evacuation hospitals in Froidos and Fleury. Neither time nor men were available to put 6 inches of earth in these trucks, and statements of wounded men were unanimous that truck transportation was extremely uncomfortable.¹⁸ Examination of the reports shows that divisional hospital units cared for three-fourths of the divisional casualties and also for many coming to them from adjoining divisions. Evacuation work fell mainly to United States Army Ambulance Service Sections No. 593 and No. 640, which transported about 3,700 patients.¹⁸

Summary of work of the field hospital section¹⁹

	91st Division	Others	French	Germans
Brabant, Sept. 25-28:				
Wounded.....	342	254	2	25
Gassed.....	85	34	0	0
Sick.....	45	127	8	1
Bois de Cheppy, Sept. 29-Oct. 2:				
Wounded.....	865	224	3	20
Gassed.....	229	43	0	0
Sick.....	439	49	1	0
Near Vervy, Oct. 3:				
Wounded.....	67	14	1	2
Gassed.....	12	3	0	0
Sick.....	46	12	0	0

THE 37TH DIVISION

On September 16 the 37th Division was relieved from the Baccarat sector, and moved to the new area around the town of Robert-Espagne. After a rest of four days it proceeded to Recicourt. Two days later the first elements of the division moved north to participate in the Meuse-Argonne operation, which was then about to be launched. Division headquarters were established at Verrieres-en-Hesse farm, 4 km. (2.4 miles) south of Avocourt.²⁰

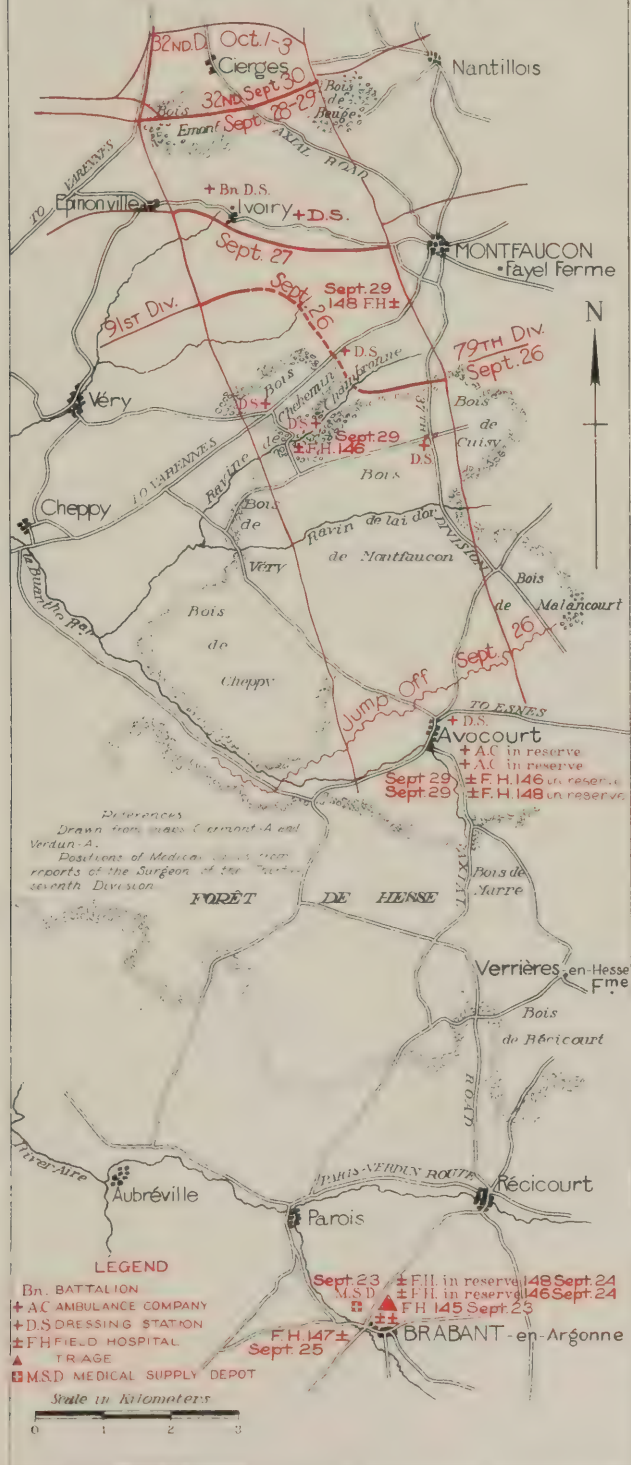
On the night of September 24-25 the division took its position for the initial attack on a front of a little over 3 km. (1.8 miles), extending east and west, just north of Avocourt.²⁰

On September 26 the attack formation was right to left: 73d Brigade (less headquarters and 2d and 3d Battalions, 146th Infantry); 74th Brigade (less 1st Battalion, 148th Infantry).²¹

The 146th Infantry, less one battalion, and one battalion of the 148th Infantry and the 134th Machine Gun Battalion constituted the divisional reserve, following on the axis of liaison.²¹

MEUSE-ARGONNE

1 ST PHASE 37 TH DIVISION



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

The division moved forward from the parallel of departure at 5.30 p. m., September 26, following a rolling barrage, and with comparatively little opposition from the enemy infantry but much machine-gun opposition. The 73d Brigade reached the ridge beyond the north edge of Bois de Montfaucon, and the 74th Brigade penetrated a point of the enemy position about 1 km. (0.6 mile) south of Ivoiry that evening.²¹

On September 27 the attack commenced at 5.30 a. m., and the success of the preceding day was continued to a general line about 500 meters (545 yards) south of Ivoiry. At about 9 a. m. the advance was temporarily stopped by an enemy counterattack against the 73d Brigade. With the aid of the brigade reserve, this counterattack was driven back and the brigade again moved forward at about 9.30 a. m. At 10.30 a. m. elements of the 74th Brigade entered the town of Ivoiry, in the face of direct enemy artillery and machine-gun fire, and by 11.28 a. m. the 74th Brigade had taken Hill 256, southwest of Ivoiry. The 148th Infantry, under artillery and machine-gun pressure, withdrew from Hill 256 during the afternoon. At 10.30 a. m. patrols of the 73d Brigade were entering Montfaucon, which was still occupied by hostile machine guns. At 11.28 a. m. the enemy from in or near the Bois de Beuge and north of the town of Cierges commenced shelling troops of the division along the entire front, the 145th Infantry receiving fire of direct range. At 12.07 p. m. the intense, heavy enemy artillery and machine-gun fire drove the leading elements of the 147th Infantry back on the Second element. At 1.15 p. m. the division commander directed the 74th Brigade to move forward and occupy the enemy's second-line position, to organize the position, and to prepare to resist a counter-attack. At 1.33 p. m. the 73d Brigade had occupied Montfaucon and cleared it of the enemy. At 5.43 p. m. the 73d Brigade had succeeded in occupying the enemy's second-line position, and with the aid of captured enemy artillery were able to hold but not advance. At dark, the line halted approximately along the Ivoiry—Montfaucon road.²¹

September 28, at 7 a. m. the attack was resumed, and 35 minutes later troops of the division entered Bois de Beuge and Bois Emont. The infantry of both brigades continued slowly, and at 10.45 a. m. was approaching Cierges. At 2.55 p. m. the 73d Brigade was holding a line paralleling the Cierges—Nantillois road, and about 200 meters (219 yards) to the south thereof. The 74th Brigade had been counterattacked by infantry, supported by machine guns and artillery, and at 5.25 p. m. it again attacked through and around Bois Emont, which was practically cleared of the enemy, and the troops rested for the night on a line approximately from a point 1.5 km. (0.8 mile) east of Cierges to the eastern edge of Bois de Beuge.³ The men were now much exhausted from being continually wet and from the constant exposure of two days to artillery fire, which at times was very intense for periods of from half an hour to one and one-half hours.²¹

On September 29, at 7.25 a. m., the 74th Infantry Brigade moved forward and reached the open ground east of Bois Emont and then reached a line joining the closest points of Bois Emont and Bois de Beuge. Tanks, which

accompanied the infantry, turned back from the southeast corner of Bois Emont where they came under a direct, as well as indirect, laying of artillery fire. When the tanks turned, the infantry took shelter in the hills southeast of Bois Emont and remained there. A battalion of the divisional reserve, having got out of place in a move to join the divisional reserve during the night of September 28-29, and having halted in the rear of the extreme left of the 74th Brigade, was then directed by the division commander to proceed forward through the opening of Bois Emont and Bois Communal de Cierges, or through the edges of these woods, to reduce the machine guns west and northwest of Cierges. Leading patrols of the 74th Brigade had succeeded in entering Cierges. The increased artillery fire, only lightly replied to by our artillery, due to lack of ammunition, and the intense machine-gun fire, coming apparently from every elevation north, northeast, and northwest of Cierges, completely stopped the advance of both brigades. The greater part of the 74th Brigade was still on the ridge south of Bois Emont, where it had spent the previous night. Near noon, a counterattack by the enemy, starting apparently from the ridge 2 km. (1.2 miles) north of Cierges, advanced in the direction of Cierges, but was halted by our machine-gun and rifle fire as it came down the south slope of the ridge 1 km. (0.6 mile) north of that place, and turned back. The Bois Emont, Bois de Beuge, and Bois Communal de Cierges were now filled with phosgene and mustard gas, rendering them impassable. This limited the forward passage to the spaces between these woods. Attempts to advance farther at this time were deemed inadvisable, and at 2.12 p. m. the division commander directed that the lines be well dug in and held. This was done on approximately the same line that was held in the morning, the most advanced position.²¹

Pursuant to Field Orders No. 49, Fifth Corps, September 29, the attack was not continued on September 30, and the day was given over to organization and consolidation of the position then held.²¹

In the afternoon of October 1 the relief of the 37th Division by the 32d Division was started and was completed at 8.30 p. m., the same night, the division starting its movement to the new area in the neighborhood of Recicourt.²¹

MEDICAL DEPARTMENT ACTIVITIES

By September 1 the Medical Department of the 37th Division had been furnished with all the required personnel, matériel, and other supplies. No horse ambulances and no wheel litters were available till some time later, after the Meuse-Argonne operation and when the division was serving in Belgium. Shortage in transportation had an important bearing on its activities.²²

On September 25 arrangements for the evacuation of wounded were made as follows: The triage was located at Brabant, a small town about 2 km. (1.2 miles) south of Recicourt. Two field hospitals and the medical supply depot were established in one half of this town, and the two other field hospitals were held here in reserve. The other half of the town was

occupied by two field hospitals of the 91st Division. One ambulance company was detailed to the 73d Brigade and another to the 74th. The two other ambulance companies were held in reserve.²³

In view of the necessity that artillery and ammunition have right of way, the evacuation of wounded by vehicles was minimized as much as possible for the first 24 hours of the conflict. Regimental surgeons were advised of the conditions and instructed to use such litter bearers as they had, as little ambulance service was to be expected for the first 24 hours.²⁴



FIG. 70. Advanced dressing station near Avocourt, September 26, 1918

On the 26th the two reserve ambulance companies were ordered to Avocourt, where a dressing station was opened. Bearer sections accompanied the advance and were deployed across the entire division sector, with instructions to collect all wounded and bring them to the dressing station at Avocourt.²⁴

The road from Avocourt leading through enemy trenches was absolutely blocked and impassable for motor transport. This necessitated a long and difficult carry for the bearers and retarded evacuation considerably. During the 26th and the succeeding night about 300 wounded were collected at Avocourt, and were evacuated with difficulty, on account of congested road conditions, to the triage at Brabant. During the night many of the wounded

were missed by bearer parties, and dugouts all over the field began to fill with walking wounded from the various regimental and battalion dressing stations.²⁴

By the morning of September 27, when the advance was resumed, it was found that most of the battalion and regimental stations which had accompanied the advance through the forest had collected many casualties which they had been unable to evacuate, as the road remained blocked and ambulances had been unable to come forward. Many wounded had been



FIG. 71.—Entrance to dressing station operated by Ambulance Company No. 148, 37th Division, near Cierges, September 26, 1918

carried great distances on litters. While the troops had advanced from the Ravin de Chambronne past Montfaucon and had reached the vicinity of Ivoiry, many of the battalion dressing stations, delayed as they were by many wounded, were unable to keep up with them. The situation grew worse hourly, for there developed a great stiffening of the German defense, which increased greatly the number of casualties.²⁵

A number of the ambulant wounded and bearer parties proceeding to the rear came to a crossroads where the division command post was located, and wounded began to congregate at this point, though there was no medical formation established there to care for them. A forward dressing station was hurriedly established at this point by the medical detachment on duty

with the 112th Field Signal Battalion and such other medical officers and men as were in the vicinity, and orders were sent to an ambulance company to proceed to this crossroads and locate a station there immediately. By this time the horse transport of the division (nonmedical) had managed to get through from Avocourt, and upon unloading their supplies of ammunition they were sent to this dressing station and the wounded evacuated in their wagons, then the only available means of transport from this point. The patients were thus carried to Avocourt and from the dressing station there were sent in to Brabant.²⁵

Meanwhile the two reserve ambulance companies had been brought forward. One of these operated two stations, one at crossroads in Bois de Montfaucon and the other on Montfaucon ridge, about 2 km. (1.2 miles) west of the ruined village of that name. The other motor ambulance company occupied some abandoned German dugouts in Ravin de Chambronne. The third ambulance company also established a dressing station in Bois de Chehem. A number of stations were thus scattered on the field because of lack of transport and the necessity for reducing to the minimum the work of carrying patients by litter, lest bearers, for whom there were no replacements, be exhausted.²⁶

By this time the regimental and battalion dressing stations of the 74th Brigade had advanced, and most of them had taken station in the town of Ivoiry and in a near-by orchard. Regimental and battalion dressing stations of the 73d Brigade advanced and took position in a railroad quarry not far from Bois de Beuge. They were in this position about the time of the withdrawal of the division on October 1.²⁷

On September 28 so many casualties were scattered over the field, notwithstanding the fact that every wagon in the division was carrying wounded to the rear, that the situation became very serious, and strong efforts were made to break through with ambulances from Avocourt on any road leading to the front through other division or corps roads. Two ambulances managed to get through from Avocourt, and six ambulances from the 32d Division appeared and reported to the 37th for duty. These six ambulances had managed to come through on the road leading from Varennes, which was in much better condition than any road which the 37th Division was using. They were loaded with wounded and were dispatched to the rear; it was learned later that they were 72 hours in getting back to Brabant, a distance of about 20 km. (12 miles), over difficult and congested roads and by a round-about way.²⁸

The advisability that a division be equipped with a limited number of animal-drawn ambulances and wheeled litters became apparent from this experience.²⁸

Orders were now issued that no more motor ambulances be sent to the rear, but be retained at the front. The two reserve field hospitals were ordered from Avocourt, one reaching the ambulance company position in the Ravin de Chambronne and establishing there. This hospital was very close to the front, but no other suitable place presented which had as much protection as

had this. On September 29 the two motor ambulances that had succeeded in getting through from Avocourt were used to evacuate the wounded from battalion aid stations through the dressing station at the crossroads. To add to the difficulties, a heavy rain had fallen the day before, and many neighboring dugouts were filled with wounded. A number of these had to lie all night in the rain with only such shelter as could be obtained from tarpaulins, none of which stood up through the night in the storm.²⁷

Before daylight on September 30, the division commander ordered all wagons of the division assembled and concentrated for the evacuation of the wounded. By this means the problem was fully solved. The road through Varennes was relieved of its congestion on the 30th, ambulances managed to get through, and evacuation ran more smoothly, with the result that by October 1 most of the wounded had been evacuated. The sanitary train remained on the field through October 2, reaching all dugouts and shelters and collecting the remaining wounded. It was relieved on that day by the sanitary train of the 32d Division and proceeded to Brabant.²⁷

THE 79TH DIVISION

Beginning on the night of September 16-17, 1918, the 79th Division took over the Montfaucon sector, extending from west of Avocourt to southeast of Haucourt, relieving the French 157th Division.²⁸

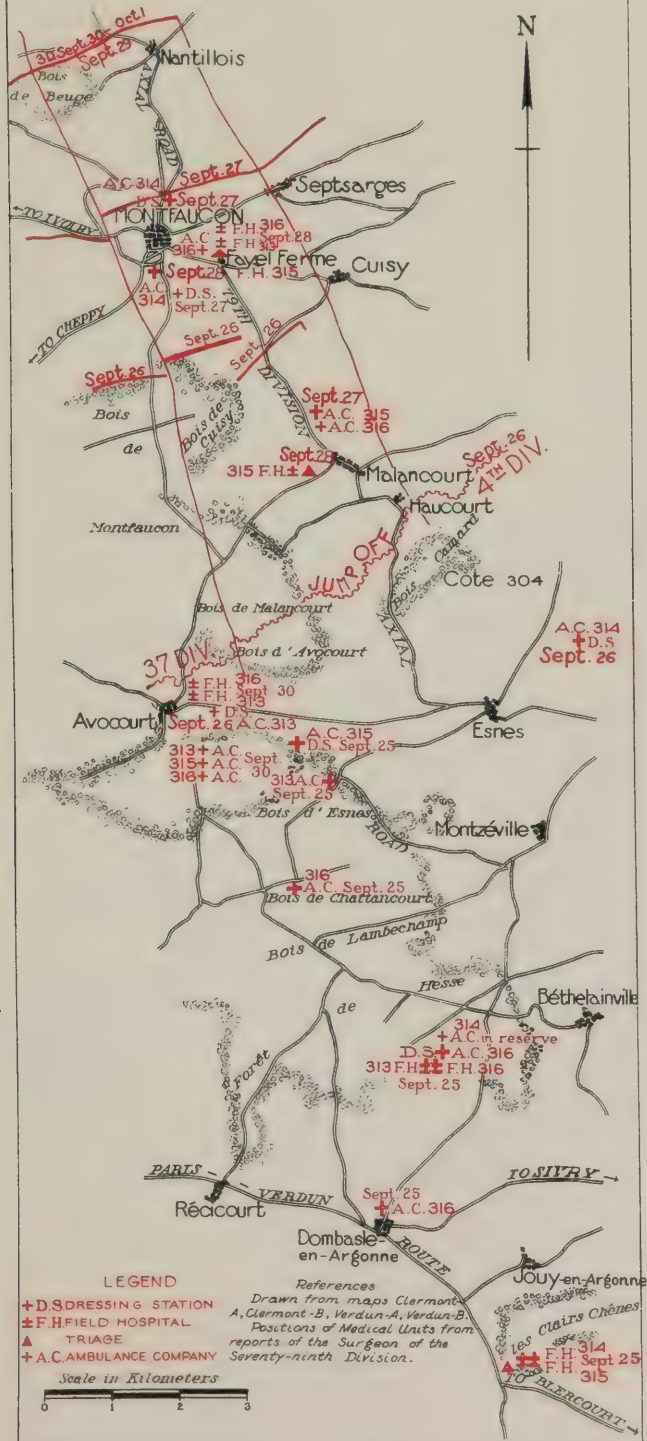
On September 25 the original front occupied by the 79th Division was contracted so that the western boundary was the western edge of Bois d'Avocourt.²⁹

On September 26 the infantry attack commenced promptly at 5.30 a. m. The 313th Infantry effected the necessary openings and went forward without much difficulty, except for the fact that the nature of the terrain over which the troops of this regiment had to pass made it impossible to keep up with the barrage, and the regiment soon lost its protection. The advance progressed satisfactorily until about 8 a. m., when it was temporarily retarded by enemy machine-gun fire and high-explosive shelling. At 1 p. m. the advance was held up in front of the western edge of the Bois de Cuisy by heavy machine-gun fire and high-explosive shell fire. Reorganization was soon made, however, and the western edge of the Bois de Cuisy was taken at 4 p. m., with the aid of tanks which had come up at that time. The advance was continued, and at 6 p. m. the northern edge of the woods was gained. Darkness was coming on, but in compliance with instructions from the corps headquarters the regiment took the enemy's strong position near Montfaucon, with the assistance of two tanks. After suffering heavy casualties, the regiment withdrew to the edge of the woods, at which point it bivouacked for the night.²⁹

The 314th Infantry, on the right, had difficulty from the beginning of the attack. In some places the troops were unable to get through the wire in the time allotted; also the unusually rough condition of the ground in the immediate front of the regiment caused the men to fall behind the barrage at the

MEUSE-ARGONNE

1ST PHASE 79TH DIVISION



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

outset, and as a result they obtained no protection therefrom at all. The advance continued, during which clouds of thick fog and heavy smoke in the ravines and drawheads caused many enemy machine-gun nests to be passed unnoticed. When, at 10 a. m., the fog lifted, the regiment was subjected to enemy machine-gun fire from all points of the compass. The remainder of the day was occupied in clearing out these nests by the rear elements of the regiment, though at the same time the advance was continued. At 6 to 7 p. m. the regiment was organized for further advance, but because of impending darkness a halt was ordered and the regiment bivouacked for the night.²⁹

The road conditions made traffic extremely difficult. Apparently no reconnaissance had been made in advance to examine the road situation, and the one road previously allotted to this division was entirely inadequate for the program the division had to carry out. A very bad traffic block ensued as a result, and the division roads were continually blocked throughout the operation.²⁹

On September 27 the 313th and 314th Regiments of Infantry had begun anew the advance of the previous day. From 5 a. m. on it was raining, and the road situation was becoming worse. Roads had to be constructed over shell holes which were practically contiguous, and it was not possible for the horse artillery to get through. In addition, the road situation at Malancourt was such, due to the use of the Malancourt—Montfaucon road by both the 79th and the 4th Divisions, that when the accompanying artillery did arrive there it could not get through, and the attack proceeded without any effective artillery support until about noon, when the two battalions of the 147th Field Artillery were able to pass and take up an advance position. Nevertheless, the 313th Infantry moved out of the woods and began its attack on Montfaucon at 7 a. m. and at 11.50 a. m. Montfaucon was in its possession. At 3.30 p. m. the attack was renewed. The advance continued under heavy fire from Bois de Beuge to the north until 6 p. m., when the enemy fire became so severe and the losses so heavy that, because of this and the exhausted condition of the troops, the regiment was halted in position for the night.²⁹

The 314th Infantry was directed to push ahead at an earlier hour than that ordered for the attack of the 313th Infantry, and accordingly began its advance at 4 a. m. on the 27th. Good progress was made before dawn, but because of the darkness, as had happened the day before, enemy machine-gun nests were passed unnoticed necessitating their being silenced subsequently by rear elements of the regiment. On the regiment's right flank near Cuisy severe machine-gun fire was encountered, but was overcome without much artillery assistance. North of Montfaucon strong resistance was encountered, so the regiment was reorganized to attack Nantillois from the right flank and to come in by the north of the town. Attempts all during the afternoon failed to take Nantillois, chiefly because of the very heavy shell fire coming from all over the front and because of the exhaustion of the troops, who had obtained no supplies of any kind since the advance

began. Bivouac for the night of September 27-28 was made about one-half kilometer (0.3 mile) north of Montfaucon.²⁹

On the night of September 27-28 the troops of the 313th and 314th Infantry were relieved to enable them to obtain food and rest, neither of which had they had since the beginning of the advance. The 315th Infantry relieved the 314th on the right and the 316th relieved the 313th on the left of the division sector.²⁹

On September 28 the attack was begun at 7 a. m., after artillery preparation. The 316th Infantry, on the left, moved out against the Bois de Beuge, and the 315th Infantry, on the right, against Nantillois. The advance of both regiments was over open ground, raked by shrapnel and high-explosive shell fire. The 316th Infantry was also under heavy machine-gun fire from the Bois de Beuge, as well. The advance nevertheless continued, and at 2 p. m. the 316th Infantry had progressed through the Bois de Beuge, over an open valley beyond, and to the woods north of Hill 268.²⁹

The 315th Infantry, on the right, had entered Nantillois by 10.50 a. m., and after being re-formed and given a short rest on the high ground north of the town, it advanced on Madeleine Ferme, to the north. Heavy enfilade artillery fire was met throughout, especially to the south edge of the woods to the north of Nantillois. The regiment was unable to get through and retired to the southern slope of Hill 274, bivouacking there for the night.²⁹

On September 29 the attack was again renewed, with the 316th Infantry on the left and the 315th Infantry on the right. The artillery fire was very intense over the entire front, especially on the right sector. The troops began to attack at 7 a. m. The right battalion of the 316th Infantry succeeded in reaching the western edge of the Bois des Ogons and in clearing it of machine guns. The 315th Infantry, on the right, advancing also at 7 a. m., was able to get into the Bois des Ogons but was unable to hold it, owing to the enemy fire, and it withdrew again to Hill 274, entrenching on its reverse slope.²⁹

At 12.30 p. m. the 316th Infantry effectives had been so reduced that it had not many more than 1,000 men, who had become somewhat disorganized during the advance. In consequence, the 313th Infantry replaced it, and the 316th Infantry was reorganized into one battalion to follow the 313th at 800 meters (872 yards). This arrangement was completed, but because of the physical condition of the troops the division commander ordered a withdrawal to a line running along the northern edge of Bois de Beuge, there to take a halting position. This was done at about 4 p. m.²⁹

On September 30 the 79th Division was assigned to the Third Corps. It was relieved by the 3d Division and was assembled in the region south of Montfaucon, thereafter being withdrawn to a concentration point south of the Avocourt—Esnes road.^{8, 29}

MEDICAL DEPARTMENT ACTIVITIES

The 304th Sanitary Train, less Field Hospitals No. 314 and No. 315, had encamped at Gedeon about 12.30 a. m. on the night of September 16. On September 25, 40 litter bearers from each of the 4 ambulance companies were

assigned to report to the four Infantry regiments to facilitate liaison and evacuation. Ambulance Company No. 313 located an advance dressing station at Morigny. Ambulance Company No. 315 established a dressing station at Cesar, where United States Army Ambulance Service Section No. 506 was also stationed. Ambulance Company No. 316 operated at Gedeon a station for the slightly wounded. A group consisting of 1 officer and 10 enlisted men was placed at Camp Seiville by Ambulance Company No. 316 to transfer any wounded from the 40-cm. railroad to the 60-cm. line. Animal-drawn ambulances of this company were stationed at Dombasle to receive the slightly wounded who were expected to come down on the narrow-gauge railroad. United States Army Ambulance Service Section No. 502 was operating at Gedeon, where the dressing station of Ambulance Company No. 314 was held in reserve.³⁰ Field Hospitals No. 314 and No. 315 were stationed at Les Clairs Chenes, the former operating as a gas hospital and the latter as a triage. Field Hospital No. 313 was at Gedeon, its equipment loaded on trucks and ready to move. The personnel and officers of Field Hospital No. 316 were held in readiness at camp "A," at Gedeon. Although several sick were evacuated, there were no casualties or missing prior to the operation.³⁰

On September 26 Ambulance Company No. 313 and United States Army Ambulance Service Section No. 502 moved to a point south of the Esnes—Avocourt road where, for 30 hours, they operated and evacuated a dressing station. Ambulance Company No. 314 moved its dressing station to the post of command at Zouave and operated there for 24 hours, assisted by United States Army Ambulance Service Section No. 506. The position of the 316th Ambulance Company's advance dressing station was not changed. Field hospitals made no change in station or capacity.³⁰

On September 27 the dressing station of Ambulance Company No. 315 and United States Army Ambulance Service Section No. 506 were moved to a point on the Malancourt—Montfaucon road close to the lines. Ambulances of the 316th Company (animal-drawn) were also brought to this point. In the afternoon Ambulance Company No. 314 opened a dressing station between Montfaucon and Nantillois, where it operated until the following morning, when shelling was so heavy that patients were endangered. The company was then moved back to Montfaucon, where it operated a station on the southern edge of the town, having left a detail to complete evacuation from the former location. Ambulance Company No. 313 operated as before in conjunction with United States Army Ambulance Service Section No. 502.³¹

On September 28, as an accumulation of wounded was reported at Fayel Ferme, the dressing stations of Ambulance Companies No. 313 and No. 315 were ordered there to assist in the care and removal of the wounded, and later in the morning the whole of Ambulance Company No. 316 joined them at this place. United States Army Ambulance Service Section No. 506 moved with them, its vehicle being used to evacuate wounded by Ambulance Company No. 314, and established a dressing station on the southern edge of Montfaucon.³¹ Field Hospital No. 314 operated at Les Clairs Chenes as on previous days. Field Hospital No. 315 (triage) also operated at this place until

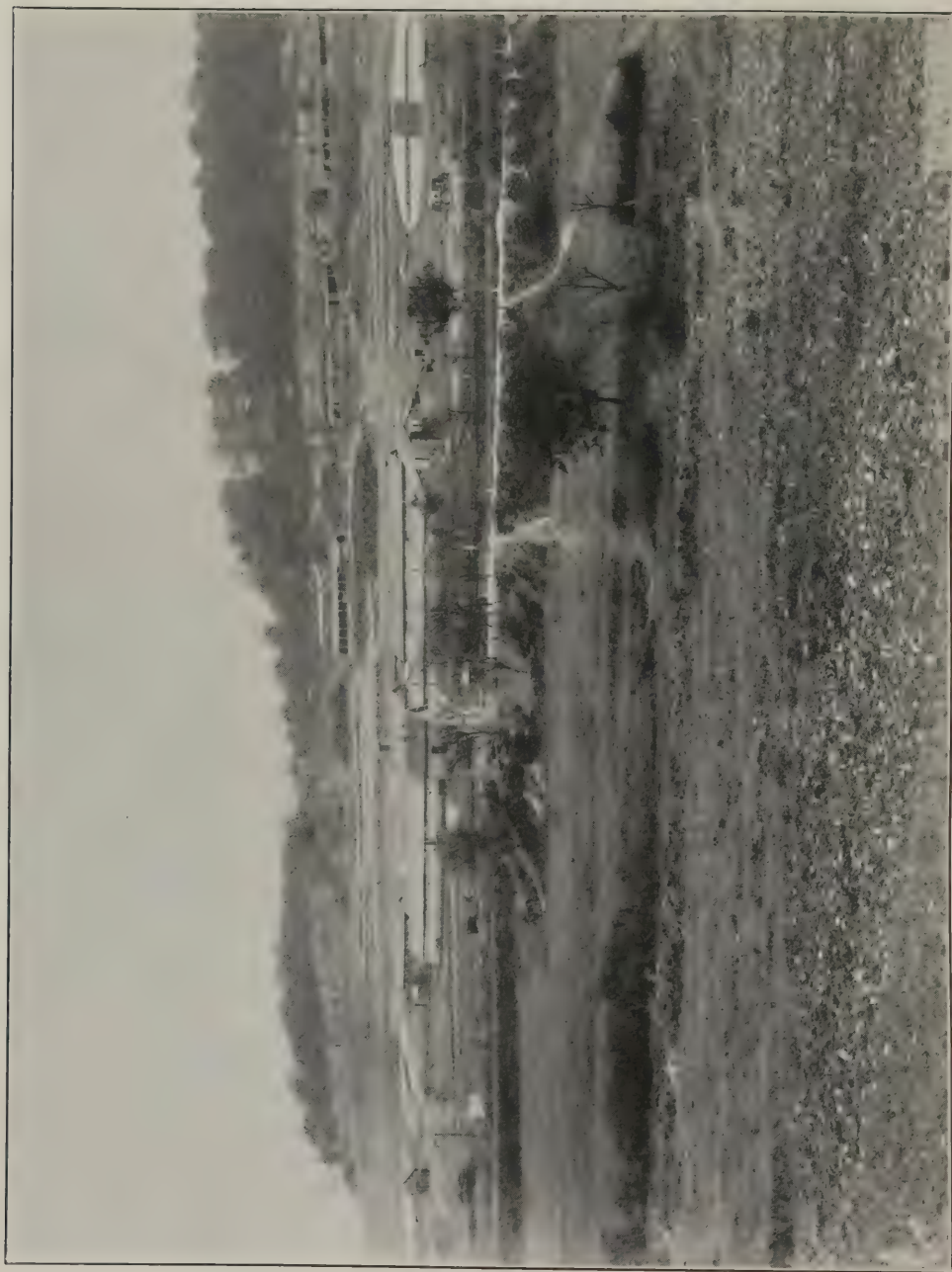


FIG. 72.—Field Hospitals No. 314 and No. 315, 79th Division, at Les Clairs Chenes

2.30 p. m., when verbal orders were given for its personnel to move to the vicinity of Malancourt to establish and operate a triage with the equipment of Field Hospital No. 313. Officers and enlisted personnel of the latter and of Field Hospital No. 316 assisted in the operation of this triage, established the same afternoon at Fayel Ferme.³¹ As road congestion was such that great difficulty was experienced in evacuating patients, field hospitals were overflowing, and there were no satisfactory means of clearing them. Many patients, however, were loaded on ambulances and trucks, after being given food and hot drinks, and were started rearward.³¹

On September 29 the dressing station personnel of Ambulance Company No. 314 operated as heretofore, while dressing station personnel of Ambulance Companies Nos. 313, 315, and 316 worked in conjunction with the field hospitals at Fayel Ferme. United States Army Ambulance Service Sections No. 502 and No. 506 were based at this point, to which they evacuated patients.³¹ Field Hospital No. 314 operated as formerly. Assisted by officers and enlisted personnel of Field Hospitals No. 313 and No. 316, Field Hospital No. 315 operated the triage at Fayel Ferme until about 3 p. m., at which time the area was shelled. After 8 or 10 shells had fallen, orders were given for the evacuation of patients to points of safety. Until this time the hospitals had been greatly congested, for slightly wounded men had walked in from all directions. This congestion was due chiefly to lack of transportation, attributable, in turn, to the blocking of ambulances on crowded roads. So far as possible, patients were loaded on vehicles, but Ambulance Companies Nos. 313, 315, and 316, as well as hospital personnel, now carried patients by litter practically day and night until this site was evacuated. Field Hospitals No. 313 and No. 316 were then ordered to evacuate to Malancourt and there to open a triage, while Field Hospital No. 315, with its personnel and officers, was ordered to return to Les Clairs Chenes to reestablish the triage formerly operated there.³²

On September 30 Ambulance Companies Nos. 313, 315, and 316 moved with the triage from Malancourt toward Avocourt at a point on the Malancourt—Avocourt road. Ambulance Company No. 314 operated as on the preceding day. United States Army Ambulance Service Sections No. 502 and No. 506 were stalled on the road with all other transportation, the road being blocked for more than 24 hours. Field Hospital No. 314 operated as on the previous day. Field Hospital No. 315 was en route from Malancourt to Les Clairs Chenes. Field Hospitals No. 313 and No. 316, which operated the triage at Malancourt until about 2.30 p. m., were then ordered to Avocourt. A considerable number of patients had been cared for before that hour, though it had been necessary to bring them in by litter the entire distance from Montfaucon to Malancourt. At the latter station patients were loaded on every available means of transportation of whatever character, and litter bearers were sent in all directions to bring into this triage all patients found between Montfaucon and Malancourt.³³

On October 1 Ambulance Companies Nos. 313, 314, 315, and 316 were ordered to camp "A," at Gedeon, and United States Army Ambulance Service Sections No. 502 and No. 506, after unloading patients at evacuation hospitals, were ordered to join them there. Field Hospital No. 314 operated as on the preceding day, while Field Hospital No. 315 conducted the triage at Les Clairs Chenes. Field Hospitals No. 313 and No. 316 were ordered to camp "A," at Gedeon.³⁴

The following notes are copied from the Medical Department report of the 79th Division:³⁴

When action began in this sector on September 26 the divisional triage was about 16 km. (10 miles) behind the lines at les Clairs Chenes, with ambulance dressing stations as already indicated. Regimental medical units were apportioned equally to battalions, or as necessity required, usually in the proportion of two medical officers and as many enlisted men as were needed. Regimental detachments followed up the infantry, often going over with it, from one cover to another, so that as soon as a man was injured he was given first aid, including the application of splints.³⁴

Road conditions were very bad, the only available evacuation route being the axial road of the corps, so that with supply trains, ammunition trains, artillery, etc., ambulances had great difficulty in getting to and from the front. Dressing stations were located in dugouts or wherever other cover could be found. Because of congestion on the only available evacuation route, motor ambulances were held up for 36 and, on one occasion, for 48 hours. When word was received that a road block was delaying ambulances, animal-drawn vehicles were rushed to the scene and, by driving out of the road through mud, bushes, and shell holes, they expedited to a great extent the removal of wounded. Because of their ability to go where motor vehicles could not, these animal-drawn vehicles were instrumental in saving many lives.³⁵

All vehicles going to the rear were loaded with the wounded to be taken to the triage, which had a bed capacity of about 800. A 30-cm. railroad was also used successfully in evacuating the wounded to this point, where they were given prompt but sufficient attention and were supplied with hot drinks, cakes, cigarettes, etc., by the Red Cross representative stationed there.³⁵

When the division was withdrawn it left one field hospital at les Clairs Chenes for two days to care for the wounded who might still be brought in. Of the 40 original ambulances, only 12 were in condition to make the trip to the divisional rest area without undergoing preliminary repairs.³⁶

THE 3D DIVISION

On the night of September 25-26, the 3d Division took position in the northeast corner of the Foret de Hesse, constituting a portion of the corps reserve of the Third Corps.³⁷

On September 29, the division was placed at the disposal of the Fifth Corps and on the 30th moved into the front line, relieving the 79th Division

and taking over its sector. This relief was completed at 6 p. m., on the 30th, with the 5th Brigade in the front line and the 6th Brigade still in reserve. The 57th Artillery Brigade and the 304th Engineers were attached to the 3d Division. On completion of the relief of the 79th Division, the 3d Division occupied the sector bounded on the east by Nantillois—Cunel (inclusive), and on the west by Bois de Beuge (inclusive)—Romagne (exclusive).³⁷

On September 30, the division front extended approximately from Cierges to Nantillois.³⁸ During the remainder of this phase of the Meuse-Argonne operation, there was considerable enemy artillery fire while the division held this sector, and but little movement of the line, except on the right, where an advance of 800 meters (872 yards) was made.³⁷

MEDICAL DEPARTMENT ACTIVITIES

From September 18 to 26 the sanitary train of the division remained in Bois de la Cote, 2 km. (1.2 miles) southwest of Vadelaincourt.³⁸ Thence it moved to Bois des Placys and on the 27th to Bethelainville. Train headquarters remained at the latter place until October 5, but the ambulance section headquarters moved on October 1 to a position 1.6 km. (1 mile) southeast of Montfaucon, where it remained until October 4 awaiting further orders.³⁹ On October 1 Ambulance Company No. 5 moved to a point the same distance south of that town and camped about 500 meters (545 yards) from the road, evacuating until October 4 a few patients from regimental stations to the hospitals at Souilly.⁴⁰ Ambulance Company No. 7 bivouacked on the Malancourt—Montfaucon road, about 1 km. (0.6 mile) east of the latter place.⁴⁰ Ambulance Company No. 26 camped at a point 1 km. (0.6 mile) north of Malancourt, and Ambulance Company No. 27 took position in abandoned trenches south of Montfaucon. All these units remained in these locations until October 4, when the second phase of the operation began. Field hospitals had moved to Malancourt and were parked there until the 4th.⁴¹

THE 32D DIVISION

On September 26, the 32d Division was in the Fifth Corps Reserve, and on that date the plan was to have the division garrison the original front of the Fifth Army Corps; that is, the old line passing through No Man's Land. Divisional troops were distributed generally convenient for fulfilling their missions. The division command post was removed to Verrieres Farm.⁴²

During the night of September 29–30, the movement was begun for this division to relieve the 37th Division in the vicinity of Ivoiry. During the day of the 30th and the night of September 30–October 1, all the elements of the 37th Division were relieved by the 32d Division, so that on the morning of October 1, the 32d Division occupied the sector, the front line of which extended about 0.5 km. (0.3 mile) south of the village of Cierges.⁴² This line exposed our troops in the open, and in consequence, on October 1, the front line

was advanced to a point about 0.5 km. (0.3 mile) north of the village of Cierges.⁴²

On October 3, the 32d Division relieved the 91st Division on the left, and it was relieved, in part, by the 3d Division on the right.⁴²

MEDICAL DEPARTMENT ACTIVITIES

Pursuant to corps orders, Field Hospital No. 128 was established September 25 for corps sick in the vicinity of Ville-sur-Cousances, and a station for the slightly wounded was opened at Jubecourt by personnel of Field Hospital No. 128 on the following day. On September 27, Ambulance Company No. 125 was assigned to temporary duty with the 79th Division, Ambulance Company No. 126 to the 37th Division, and Ambulance Company No. 127 to the 91st Division, continuing with these divisions until the 32d entered the line, when they rejoined it.⁴³ Horse-drawn ambulances were distributed to Infantry regiments. On September 29, Field Hospital No. 125 was established near Recicourt, for slightly wounded and sick. On October 2, Field Hospitals No. 126 and No. 127, which had moved to the vicinity of Varennes, were established at the southern edge of Bois de Chehem, southwest of Montfaucon, the former receiving gassed and sick and the latter functioning as triage and advance surgical hospital for nontransportable wounded. These hospitals were kept in juxtaposition throughout this action. Field Hospital No. 128, for divisional sick, was advanced to Recicourt. On October 4, Field Hospital No. 125 was ordered to establish in the vicinity of Very, where it acted both as a hospital for the sick and wounded and as an auxiliary triage for that part of the division sector. Meanwhile Ambulance Company No. 125 had established a dressing station at Montfaucon, Ambulance Company No. 126 another at Very, and Ambulance Company No. 127 still another at Ivoir. A station for slightly wounded, operated by personnel of Ambulance Company No. 128, was located near the divisional post control, and later another was opened near the intersection of the Cheppy—Montfaucon and Very—Avocourt roads. Subsequently, dressing stations were advanced to La Grange-aux-Bois Ferme.⁴³ Though the wounded who were unable to walk were usually removed by litter from regimental and battalion aid stations, in many instances they were brought out by ambulances penetrating to these formations.⁴⁴ Evacuation from the front lines was usually prompt and satisfactory. In some cases evacuation from divisional to corps and army hospitals was delayed by traffic conditions and at times by the lack of sufficient ambulances, but no unusual or extraordinary delay occurred.

Patients received refreshment and were given opportunity to rest at battalion and regimental aid stations whenever possible.⁴⁴

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- (7) F. O. No. 49, Fifth Corps, September 29, 1918.
- (8) F. O. No. 50, Fifth Corps, September 30, 1918.
- (9) F. O. No. 55, Fifth Corps, October 3, 1918.
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- (36) Ibid., 12.
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CHAPTER XXIII

FIRST PHASE—Continued

THE THIRD CORPS (4TH, 80TH, AND 33D DIVISIONS)

The Third Corps formed the right of the attacking troops, First Army, in the Meuse-Argonne operation. From left to right it at first consisted of the 4th, 80th, and 33d Divisions, with the 3d Division in reserve.¹

The following extract from Field Order No. 18, published in advance of the Meuse-Argonne operation, gives the information and directions most pertinent to the present purposes:

Field Order

No. 18.

P. C. 3D ARMY CORPS, A. E. F.

21 September, 1918—9 hour.

Maps: Verdun-Mezieres, 1: 80,000, 1: 20,000, 1: 80,000, attached.

Troops:

(a) Right Division:

Major Gen. Bell.
33d Div. (less Art.).
52d F. A. Brig.
212th F. A. (Fr.).
1 bn. 308th R. A. L. (Fr.).
1 Air sq. (less 1 flight).
1 Balloon Co.
Co. A, 1st Gas Regt.

(b) Center division:

Maj. Gen. Cronkhite.
80th Div.
228th F. A. (Fr.).
1 bn. 289th R. A. L. (Fr.).
1 Air flight.
Co. F, 1st Gas Regt.

(c) Left division:

Maj. Gen. Hines.
4th Div.
250th F. A. (Fr.).
1 bn. 308th R. A. L. (Fr.).
Troop "I," 2d Cav.
1 Air sqd.
1 Balloon Co.

1. (a) The enemy holds the front from the Meuse to the Aisne with about five divisions. He probably holds from the Meuse to Malancourt (exclusive) with one division. Enemy's units are weak, discouraged, in poor morale, and afraid of Americans (announce above down to privates). Details of enemy positions shown on maps furnished.

(b) Allied armies (1st American Army on the right; 4th French Army on the left) attack on the front Meuse River (exclusive), Suippe River (exclusive), toward Mezieres. Remainder of 1st American Army will continue to hold between the Meuse and the Moselle.

(c) 1st American Army:

Right boundary of attack zone: The Meuse (exclusive).

Left boundary of attack zone: West edge of Foret d'Argonne—Grandpre (incl.)—Chatillon Sur Bar (incl.).

Direction: Buzancy—Stonne.

Objectives: See map herewith.^a

Troops:

3d Corps (4 divs.) on right.
5th Corps (4 divs.) in center.
1st Corps (4 divs.) on left.
Reserve, 3 divs.

^a The map mentioned shows the Third Corps objective to be roughly a line extending from Nantillois to Gercourt and north of Bois de Forges; the army objective within the limits of the Third Corps, from Forges to Bois de Rappes.

(d) Corps Artillery:

Brig. Gen. Gatchell.
 289th (Fr.) (less 1 bn.).
 407th "
 413th "
 81st "
 456th "
 1 bn. 308th (Fr.).
 2 Air sqds.
 1 Balloon Co.

(e) Tanks:

(None.)

(f) Air Service:

1 Air Squadron.
 1 Balloon Company.

(g) Reserve:

Maj. Gen. Buck.
 3d Div.

(h) Special troops:

See Annexes.

(d) The 17th Corps, French (part of 1st American Army), holds the Verdun salient east of the Meuse and assists in the neutralization of the heights held by the enemy, east of the Meuse.

2. (a) This corps (less 1st Div. held as army reserve) will break the hostile positions and resistance between the Rau de Forges and Bois de Foret, exploit its success by advancing north from Bois de Foret, and meantime organize the left (west) bank of the Meuse for defense as the attack progresses northwards. The attack begins D day, H hour.

(b) Missions of this corps, in detail:

(1) To penetrate promptly the hostile second position, in order to turn Montfaucon and the section of the hostile second position within the zone of action of the 5th Corps (center corps) and thereby assisting in the capture of the hostile second position, west of Montfaucon.

(2) To await arrival of 5th Corps at corps objective (dashed brown line); then to advance in conjunction with 5th Corps to American Army objective (full brown line) and organize this line for defense.

(3) To reach the American Army objective (full brown line) on the afternoon of D day and exploit this penetration of hostile third line during the night D/D plus 1.

(4) To conserve its strength and be prepared to advance north of combined army first objective (Bois de Foret) when ordered by army commander.

(5) To protect right flank of the general attack (organize west bank of Meuse for defense).

(6) Corps and divisional artillery to assist, when necessary, in neutralizing hostile fire and observation from heights east of the Meuse.

* * * * *

Secret.

HEADQUARTERS THIRD ARMY CORPS,

AMERICAN EXPEDITIONARY FORCES,

France, 21st September, 1918.

G-1.

Order No. 18.

Annex #5 & 7 F. O. #18

1. Railheads:

3d Corps—Nixeville.
 1st Div.—Souilly.
 3d Div.—Nixeville.
 4th Div.—Vadelaincourt.

33d Div.—Vadelaincourt.

80th Div.—Nixeville.

* * * * *

4. Roads:

(a) Circulation: See sketch. Axial roads: 33d Division—Thierville, Charney, Marre, Cummieres, Forges; 80th Division—Fromereville, Germonville, Chattancourt, Bethincourt, Cuisy, Gercourt; 4th Division—Sivry, Bethelainville, Sivry, Montzeville, Esnes, Malancourt, Cuisy, Septsarges, Nantillois, Cunel, Bantheville, Amereville. The road from Nantillois to Cunel will also be used by part of the elements of the right division of the 5th Corps.

(b) Traffic: Control of traffic at H hour by divisions in their respective areas north of the line Esnes, Chattancourt, Marre (all exclusive). South of this line by the Corps.

Stationary police posts at crossroads, bridges, and road forks. Bicyclists, motorcyclists, or mounted police patrols on main roads to control traffic, prevent jams, and preserve road discipline.

* * * * *

5. Evacuation:

(a) Men:

Sorting stations (triaux).

33d Div.—Glorieux Verdun.

80th Div.—Fromereville.

4th Div.—Sivry la Perche.

Evacuations to divisional hospital by divisional ambulance companies. Ambulances will be augmented upon request to corps surgeon. Evacuation from divisional field hospitals by army ambulance companies as follows:

Seriously wounded: To mobile surgical hospitals at Claire Chene—Bois de Placys—La Morlette.

Severely wounded: To E. H. No. 4 at Fountain Routon and E. H. No. 8 at Petit Maujouy.

Sick and slightly wounded (truck cases): To E. H. Nos. 6 and 7 at Souilly.

Gassed: To gas hospital Souhesme le Grande.

Contagious: To hospital at Benoite Vaux.

Nerves and shock: Psych. Hospital No. 2 at Julvecourt.

As advance progresses corps surgeon will arrange for advance of division field hospitals. He will also arrange for evacuation of corps troops.

(b) Animals: To corps veterinary hospital at Souhesme le Grande by divisions and corps troops. From corps veterinary hospital to army veterinary hospitals at Heippes and Autrecourt by corps veterinarian.

* * * * *

On September 26, 1918, the attack was launched along the corps front at 5.30 a. m., from a line which extended approximately from Regneville, on the east, to about 1 km. (0.6 mile) southeast of Malancourt, on the west. By night, the corps line extended generally as follows: From a point about 1 km. (0.6 mile) northeast of Forges, along the Meuse, to the northeast of Dannevoux, thence to a point about 1 km. (0.6 mile) east of Nantillois, approximately along the line Dannevoux—Nantillois.^{1, 2}

On September 27 strong enemy resistance developed at Montfaucon and Nantillois, and on the left of Cuisy woods. For a time the advance was checked by heavy machine-gun fire all along our front, by well-organized enemy nests. The left pushed as far forward as Bois du Fays, but because of heavy casualties withdrew for the night to a position on the reverse slope

of Hill 295, a point about 2 km. (1.2 miles) south of that which had been reached the day before. For the night, the corps line extended approximately as follows: Vicinity of Cote 295, northeastwardly to the vicinity of Cote 280, thence through the Bois de la Cote Lemont, thence eastwardly to the Meuse and southwardly along the west bank of the Meuse to the vicinity of Forges.^{1, 2, 3}

On September 28 the 33d Division, on the right, started a consolidation of their lines, facing the east along the Meuse south of Vilosnes, and sending out patrols to reconnoiter for fords along the river front. Despite strongly organized machine-gun fire, the left and center divisions advanced, and by night occupied a line approximately as follows: About one-half kilometer (0.3 mile) northeast of Nantillois, thence through the northern portion of Bois de Brioules, thence through Bois de la Cote Lemont, to a position about one-half kilometer (0.3 mile) in advance of the line of the day before, thence southeastwardly as of the day before.^{1, 2}

On September 29 the 65th Brigade of the 33d Division, which had been held as divisional reserve, completed its relief of the sector held by the 80th Division, less its divisional artillery. On the corps left, the advance of our troops in the direction of Brioules was halted by the stubborn resistance of the enemy, who had thrown fresh units in his lines opposite us. Severe flanking machine-gun fire to the left, as well as heavy frontal fire, made further advance by our troops impossible. The corps line remained practically unchanged throughout the day except for slight advance in Bois de Brioules and Bois de la Cote Lemont.^{1, 2}

From September 30 to October 3 the front line remained unchanged. On the night of October 3-4 the 79th Division was relieved from duty with the Third Corps, and proceeded to the zone of the French Second Colonial Corps.¹

MEDICAL DEPARTMENT ACTIVITIES

At this time the office of the corps surgeon was organized and operated as follows:⁴ The corps surgeon made all recommendations concerning medical department tactics and maintained relations with all division surgeons. His daily routine was to visit G-1 of the corps, the chief surgeon of the army or his representative, each divisional triage, and, if at all practicable, each division surgeon.⁵ Almost daily he visited the several evacuation hospitals serving the corps and frequently inspected the divisional sanitary units in addition to his daily visit to their triages. One assistant to the corps surgeon was in charge of all Medical Department matters relating to corps troops except tactical movements of the sanitary train, and another was office executive.⁴ The latter was occupied chiefly in receiving code reports by telephone and in giving verbal telephone directions with a view to coordinating the evacuation service.⁴ It was found essential that this officer have a good telephone voice, excellent hearing, and alert mentality. He had to deal with the difficulties of battle-field communication, grasp the meaning of faint and obscure messages, change quickly from one language to another, and be prompt and accurate in the formulation of orders given. Paper work was reduced to a minimum.⁴

Consultants in medicine, surgery, and orthopedics supervised the professional service in the corps.⁴ Enlisted personnel of the office of the corps surgeon consisted of 2 field clerks, both of whom were stenographers, 3 sergeants, and about 8 privates or privates, first class. It was found convenient to have among the field clerks or office sergeants a draftsman for map work.⁵ Maps were of two kinds: (1) Secret, issued preparatory to battle, given to the corps surgeon to study and the details of which he could communicate to no one; (2) confidential, knowledge of whose purport was restricted to those entitled to their official use. These latter, giving vague battle lines and approximate corps sectors, were posted in the corps surgeon's office and gave accurate details of the location of medical units of the division, corps, and army. The routine office maps were: One of the general battle field, with the lines marked in charcoal, amended daily; the map mentioned above giving the details of the medical service and the corps circulation map indicating available roads and the regulations concerning traffic.⁵

The staff of the corps had now become a smoothly running machine. By interviewing daily the chief of G-1 of the corps, and the chief surgeon of the army or his representative, the corps surgeon was able to inform each of these officers what the other was doing or desired to do in matters affecting medical service. In comparison with the great difficulties encountered in the attack of July 18 and the lesser ones in the Vesle sector, work with the staff as it existed in the Argonne was much easier. Friendly intimacy, fostered by the corps commander, had grown up between the heads of sections and departments.⁵

The few sick from corps troops were sent to the hospitals established for the St. Mihiel sector, consisting of Mobile Hospital No. 1, at La Morlette (later at Les Clairs Chenes); Mobile Hospital No. 2, at Recourt; Evacuation Hospital No. 8, at Petit Maujouy; Evacuation Hospitals No. 6 and No. 7, at Souilly; Evacuation Hospital No. 9, at Vaubecourt; Army Psychopathic Hospital No. 1, at Benoitte Vaux; and to an improvised gas hospital at Rambluzin.⁶

Preparations for the Meuse-Argonne operation began immediately after September 12. Field Hospital No. 332, the only field hospital in the sanitary train of the Third Corps, was placed at La Morlette, where, augmented by personnel expert in the treatment of gassed patients, assigned by the First Army, it was utilized as the Third Corps gas hospital.⁶ Mobile Hospital No. 1, which had been located at La Morlette, caring for nontransportable wounded from the St. Mihiel sector, moved to Les Clairs Chenes, near Blercourt, where it served the Third Corps during the early part of the Meuse-Argonne operation.⁷

Mobile Hospital No. 5 was placed at Bois de Placys near Rampont. Evacuation Hospitals No. 6 and No. 7 remained at Souilly.⁷ Evacuation Hospital No. 8 remained at Petit Maujouy to care for the wounded who came from the eastern part of the sector along the Meuse and from the heights to the east of that river. Evacuation Hospital No. 4, coming from the Vesle sector, established itself at Fontaine Routon.⁷

Army Neurological Hospital No. 2, at Benoitte Vaux, together with the French hospital for contagious cases at the same place, continued to serve there throughout the Meuse-Argonne operation.⁷

The triage of the 33d Division was placed at Glorieux, in the vicinity of Verdun, because it was convenient to a well-equipped French hospital at that place.⁸

Great inconvenience was caused by the necessity for preserving absolute secrecy in regard to the plan of campaign, which required that all troop movements be made at night, and trucks ran only after dark. No tents were pitched, and all of the thousands of men were required to bivouac in the woods, sheltered by brush and trees, rather than in their tents. Field hospitals were dependent largely upon tentage for shelter, and it proved difficult to maneuver them into position behind troops without being observed by enemy airplanes. At the time when the 33d Division was narrowing its front next the Meuse to make more room for the 80th and 4th Divisions, which had taken over part of the front held by the 79th Division, it was necessary for the field hospitals to occupy buildings at Sivry-la-Perche and at Fromereville and then to expand by erecting tents after the battle actually commenced. For the few days that the 79th Division was a part of the Third Corps its triage was at Les Clairs Chenes, at the site afterwards taken over by Mobile Hospital No. 1.⁸

Immediately before the advance commenced on September 26, additional ambulance companies and sections and a number of French omnibuses reported as additions to the Third Corps sanitary train.⁸ These ambulance units were of different character, two of them being ambulance sections which had been loaned to the Italian Army and later reborrowed. There were also other United States Army Ambulance Service sections and some sections which were purely French.⁴ Difficulties arose from time to time in the use of these organizations, because of the different regulations under which they operated. French ambulance formations, for instance, had to be dealt with exclusively through their commanding officers, who were not always at hand, and as their vehicles were large and heavy there was great difficulty in moving them over the poor roads.⁴ The United States Army Ambulance Service sections were under rigid regulations from higher authorities to hold their vehicles together and that certain cars be withheld from service in order that proper routine repairs might be made and the drivers have needed rest.⁴ Necessary as these regulations were, in the stress of battle it was difficult to apply or even to remember them, because they were not uniform.⁴ The various ambulance units and ambulances assigned the corps were distributed equitably to the divisions for service back of their triages, but they remained under the general control of an officer of the corps medical staff. They were administered as a part of the corps sanitary train, with headquarters at Sivry-la-Perche, and a reserve was maintained for use in emergencies.⁹

On September 26 its hospitals pitched their tents and expanded to battle proportions. As the triages at Glorieux, Fromereville, and Sivry-la-Perche were connected by good roads with the fine highway running from Verdun, through Blercourt, to Dombasle-en-Argonne, transportation to evacuation

hospitals was easy after this turnpike was reached, although the total distance traversed was considerable.⁹ Fromereville, where there were sufficient buildings for a triage, was particularly easy of access because of a number of good roads. In the early stages of the offensive, evacuation to Glorieux was precarious because of artillery fire sent across the lines from heights east of the river, and for this reason the 33d Division for a time had a secondary triage at Fromereville. The 4th Division also found this a convenient point for triage at certain times during the early stages of the advance.⁹

The situation on the first day was very satisfactory. The 33d Division reached the Meuse except in one small section, had fewer casualties than had been expected, and none of the complications in evacuation⁹ developed which had been feared. The 80th and 4th Divisions, on the other hand, had many wounded in the neighborhood of Septsarges.⁹ How to use the roads about this village and Nantillois and Cuisy, leading to Esnes through either Malancourt or Bethincourt, became the great problem not only of the medical service but of all other departments. This area was in No Man's Land, and both towns and roads had been destroyed. Esnes was a heap of ruins; the surrounding hills full of dugouts.¹⁰ Malancourt and Bethincourt were laid flat, with not a building left standing, the sites of houses occasionally being marked by pieces of doorsteps or by twisted fragments of iron projecting above mounds of débris. Torrential rains washed away even the foundations of the roads, which had been shoveled clear, and deep mud impeded traffic.¹⁰ The engineers did remarkable work with sandbags. Thousands of men carried stone from the blackened, shell-pitted fields and ruined villages to the roads, for food and ammunition had to go forward for the supply of advancing troops.¹⁰ Wounded from the 79th and 3d Divisions of the corps to the left obliqued through the Third Corps area, and large numbers of them were transported by the Third Corps and sorted in its triages.¹⁰ For a short time subsequent to September 26 it was almost impossible to move the wounded from Cuisy and Septsarges, and the trip when made consumed much time. Certain of the ambulances took 23 hours in carrying wounded from Cuisy to Bethincourt, a 20-minute trip under normal conditions.¹⁰

Many days of the hardest kind of work were required to organize traffic, but considering the conditions under which the corps chief of staff labored the service of evacuation of wounded received as sympathetic attention as the situation permitted.¹⁰ Immediately following the advance, the 4th Division established a field hospital near Cuisy and the 80th Division one at Bethincourt. Both of these hospitals were under fire. It was difficult to get wounded out of Cuisy by way of Malancourt and Esnes, and this developed in the 4th Division a desire to care for its casualties at Cuisy.¹⁰ The demand for operating teams was insistent. The 80th Division evacuated its wounded to Bethincourt and thence to Fromereville, detaining at Bethincourt only such cases as were not fit for removal beyond that point. When the road from Malancourt to Bethincourt was made passable, the 80th Division removed from Cuisy by that route the remaining wounded of the 4th Division.¹⁰ During the delay an officer from the corps surgeon's office proceeded to Cuisy

and helped greatly with the evacuation service of the 4th Division and in the organization of emergency operating teams.¹⁰ Astonishing as it may seem, the wounded who were held at Cuisy much beyond what was considered the safety limit, including even those developing gas gangrene, showed but small mortality.¹¹

THE 4TH DIVISION

On the night of September 25-26 the 4th Division took over the line of Ruisseau de Forges, north of Esnes, as the left unit of the Third Corps.¹²

The division attacked at 5.30 a. m. September 26. The division was arranged in a column of brigades, each brigade with its regiments side by side. The 7th Brigade attacked and encountered little opposition before reaching the corps objective at 12.40 p. m. Here the attacking brigade halted and entrenched to await the arrival at the corps objective of the division on the left, when it was to proceed to the army objective.³

The advance of the 79th Division, on the left, was very much delayed by enemy resistance at Montfaucon. Consequently the 7th Brigade, 4th Division, remained at the corps objective until 5.30 p. m. Little advance was made before dark, owing to increased enemy resistance, and the troops remained for the night of September 26-27 on the corps objective.³

The attack was resumed without artillery support at 7.30 a. m. September 27, and the division pushed as far forward as the edge of Bois de Brioules on the right and the southern portion of Bois du Fays on the left. The left suffered heavy casualties, however, and withdrew to a position on the reverse slope of Hill 295, from which it attacked again the following day without appreciable gains. During the two days' fighting the line was along the northern edge of Bois de Brioules and along the Nantillois-Brioules road.³

On the morning of the 29th the 7th Brigade was relieved in the front line by the 8th Brigade, the 59th Infantry relieving the 47th on the right and the 58th Infantry taking the position of the 39th Infantry on the left. A slight advance was made by the 58th Infantry against machine-gun and artillery positions.³

During the four succeeding days no advance was made. The 59th Infantry cleared the northern part of the Bois de Brioules of hidden machine-gun nests and held this terrain against continued and violent artillery and machine-gun fire.³

MEDICAL DEPARTMENT ACTIVITIES

The sanitary train, less Field Hospital No. 21, which remained at Lemmes, advanced to Sivry-la-Perche, where Field Hospital No. 33 established a triage, Field Hospital No. 19 opened for nontransportable wounded, and Field Hospital No. 28 for sick.

The ambulance section established a park and dressing station at Esnes.¹³

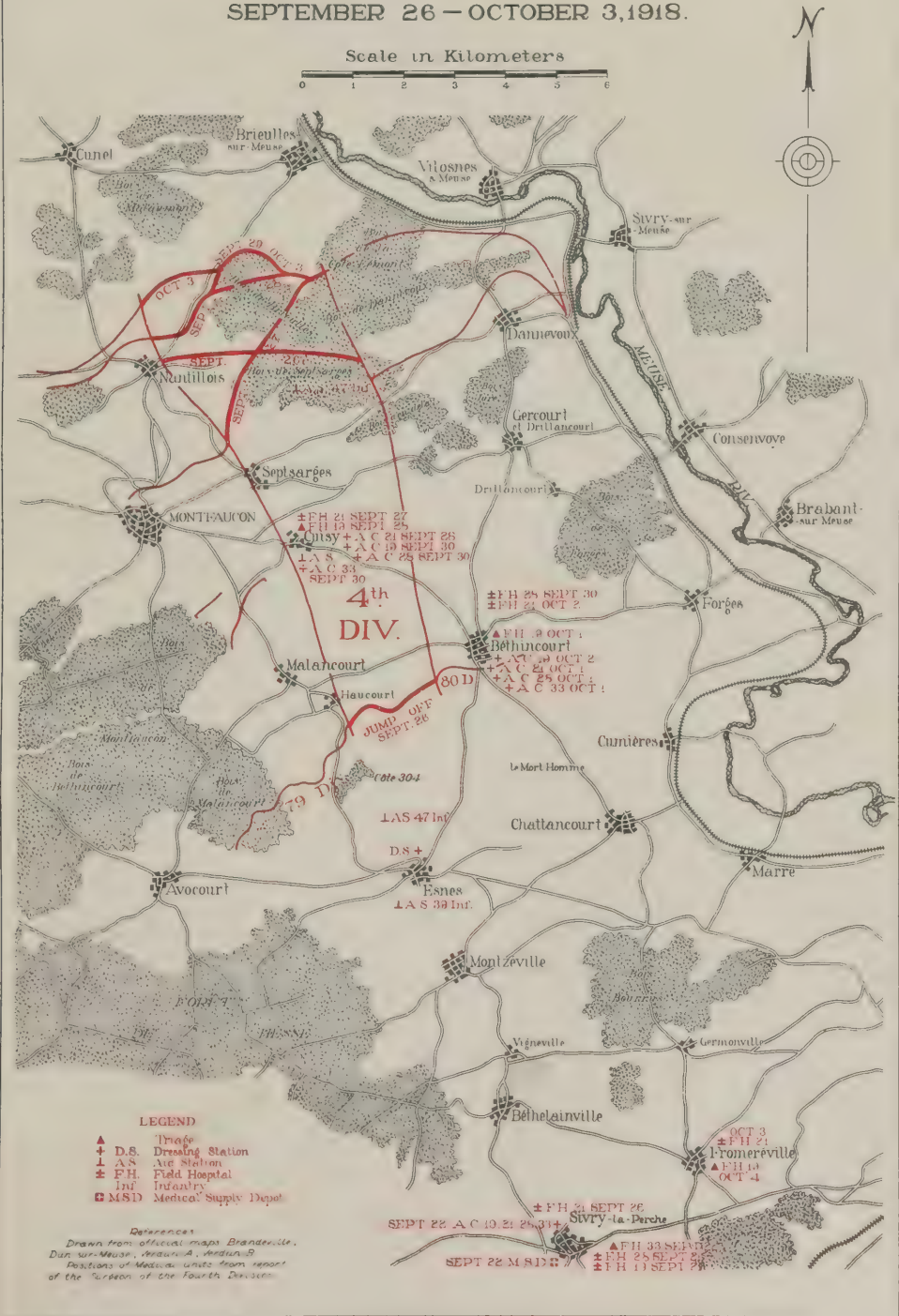
During the first two days' advance the 39th Infantry regimental aid station was established in Esnes, battalion stations not being demanded because of the extreme narrowness of the sector and the depth of the echeloned bat-

MEUSE - ARGONNE OPERATION

FIRST PHASE

FOURTH DIVISION

SEPTEMBER 26 - OCTOBER 3, 1918.



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

talions. One medical officer with the advancing battalion, with two Medical Department men to each company, followed the attack as far north as Cuisy, where a semipermanent aid station was established and maintained. A collecting point for wounded was also established near Haucourt, about midway between Esnes and Cuisy, to which point the wounded were carried by litter. The 47th Infantry regimental aid station was located just north of Esnes and later moved to the barracks known as Bismark Lager, in Bois de Septsarges. Not more than 40 patients had been evacuated from the regimental collecting point near Haucourt by ambulance when all movement was stopped by hostile fire. The only axial road was choked with guns, ammunition trucks, and traffic of all kinds moving in both directions, preventing all possibility of rapid evacuation of the forward aid stations.¹³

It was seen at once that traffic congestion would render prompt evacuation of the wounded to field hospitals at Sivry-la-Perche almost impossible. Accordingly, Field Hospitals No. 19 and No. 21, with tentage, were advanced to Cuisy for station, 24 hours being consumed by the trip. Here they rapidly filled to beyond their capacity because of the impossibility of evacuating to the rear. Evacuation from the regimental aid station established in Bois de Septsarges became very slow, on account of the muddy and congested condition of the roads and also because of intermittent hostile fire. Therefore, the wounded were held at this station, where facilities for caring for patients were as favorable as immediately to the rear. In some instances, regimental aid stations were obliged to retain their wounded 72 hours.¹³

The value of animal-drawn ambulances was appreciated at this time, and it was reported that evacuations from the front to the field hospitals at Cuisy would have been more rapidly effected and more efficiently performed by animal-drawn ambulances than by motor vehicles. Although comparatively slow, the former could have moved forward with the marching command for use in collecting the wounded on a difficult terrain without any established routes, since they were able to move where the motor vehicles could not. Notwithstanding the difficulties, all ambulances available which could be spared were filled and were started to the rear in order to clear the field. They required from 24 to 48 hours for the round trip. Though returning ammunition and supply trucks also were used to the utmost of their capacity, little impression was made on the large number of wounded collected.¹³

The site selected for the triage, at the foot of the southern slope of a hill near the main cross and axial roads, slightly in advance of the division post of command and at one time in front of the regimental aid station, was the only location suitable at the date of selection. Some artillery shortly afterwards moved to this same site and laid their guns in a semicircle, the hospital being in the middle. It was inevitable and to a certain extent foreseen that the hospital would be subjected to enemy fire intended for the Artillery. This fire became so severe that the hospital was ordered to retire to Bethincourt, 4 km. (2.4 miles) to the rear. The hospital was plainly marked with a large red cross and no attempt at camouflage or concealment was made. It

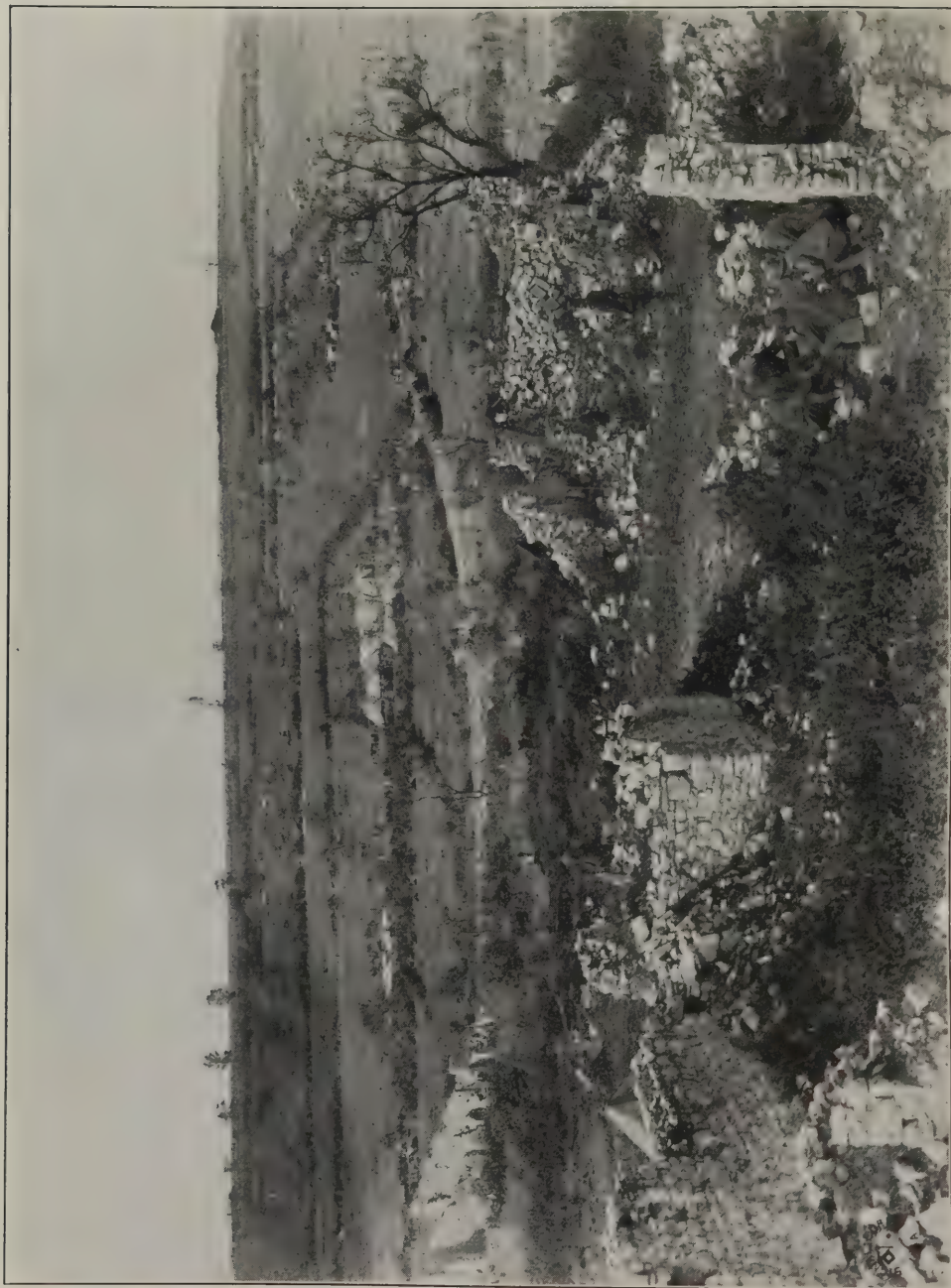


FIG. 73.—View from Cuisy across the valley toward Septsarges, showing Field Hospitals No. 19 and No. 21

was not the opinion, however, of those on the ground at the time that the hostile fire was directed at the hospital, but, rather, against the artillery, ration dumps, and roads.¹³ Eighteen casualties resulted from intermittent firing before the hospital was moved. In evacuating it preparatory to removal, all wounded who were able to walk were started overland under guide and guard. Some 20 patients were carried on litters, and the remainder not able to walk were transported by means of ambulances and trucks brought up during the night. The triage then proceeded to operate at Bethincourt, but, owing to the proximity to artillery positions and to crossroads, it was ordered to retire again, this time to Fromereville, 30 km. to the south (18.6 miles). Thereafter, road conditions having been improved by this time, evacuations proceeded smoothly, without serious difficulty except that incident to the long distance which had to be traversed.¹⁴

As a result of experience, the following general plan was adopted and successfully applied in the removal of casualties:

1. *Company aid*.—Two enlisted men, from the battalion medical detachment, were assigned to each company as dressers. First aid with the company consisted of the application of dressings by one of these men or by the wounded man himself, either at the place of receiving the wounded or at the company aid post. Patients able to walk were required to walk to the battalion station, others were assisted or carried by litter bearers, men detailed for that purpose from each company, or by enemy prisoners. When the number of wounded was too great to be evacuated promptly by battalion litter bearers, the battalion surgeon so reported to the regimental surgeon.¹⁴

2. *Battalion aid station*.—The personnel here was two battalion medical officers, a dental officer if available, and the enlisted men of the battalion medical department not already assigned with companies. One of these officers was especially charged with removal of wounded from the front to this station. The duties of the station were primary or supplementary treatment, return to duty of men needing no further care, and preparation of others for evacuation, including grouping of those able to walk to the dressing station or to the field hospital. Men unable to walk were removed according to practicability of means available, by motor ambulances, animal-drawn ambulances, or litter bearers belonging to the ambulance company.¹⁵

3. *Regimental aid station*.—While in a defensive action this station was ordinarily opened, sometimes to serve as a secondary collecting point from the battalion aid stations, sometimes solely as a dispensary, in open campaign it was seldom used, as it was replaced by the dressing station, and the regimental surgeon was thus released to supervise the care and removal of wounded along the entire front of the regiment. It was the duty of the battalion surgeons to keep the regimental surgeon informed concerning conditions at their stations, and of the latter to notify accordingly the commanding officer of the ambulance company who was evacuating them.¹⁵

Ambulance company bearer detachment.—Litter bearers belonging to the ambulance company were charged with the duty of maintaining contact with the regimental and battalion stations and were immediately available in case

evacuation from those stations by ambulance was impracticable or later became so. A litter-bearer detachment consisting of 1 medical officer, 4 sergeants, 6 dressers, and approximately 60 litter bearers was a part of each ambulance company, and ordinarily worked in the rear of each regiment in action.¹⁵

Ambulance head.—This was the station farthest forward to which ambulances could advance; sometimes a battalion aid station.¹⁵

Dressing station.—Here were posted the commanding officer of the ambulance company conducting it, and the ambulance company dressing station detachment. It was the collecting, treatment, and evacuation point for all casualties from the battalion and regimental stations which it served. The services here performed were provision of shelter, in case of need administration of warm drinks, inspection and supplementary treatment of wounds, treatment of shocked and gassed cases, classification and grouping of cases to be evacuated, and return to the front of men not in need of further care. At this point reserve litter bearers and ambulances were stationed and here the ambulance service was regulated. On a narrow front, with a single route of evacuation when many casualties were expected, three dressing station detachments operated at one point, while the fourth was held in reserve. Wounded were removed by motor, or less satisfactorily (except in very unusual conditions) by animal-drawn ambulances or trucks, the less serious cases using the last mentioned vehicles.¹⁵

Ambulance posts.—These were placed where one or more ambulances were held in readiness to answer calls from advance collecting points. These vehicles were moved according to evacuation requirements and the condition of roads. Ordinarily, one was at or on its way to each aid station, collecting point, or dressing station, as directed by ambulance regulation at the dressing station. It was a general principle that advance stations must be kept clear and that transportation should not be permitted to go so far to the rear as not to be available at the front in case of sudden need.¹⁵

Rest or relay stations.—If the route of evacuation was long or the time en route protracted, relay stations were provided, where patients rested and received hot nourishment and any minor medical or surgical attention necessary. The longer the route, the more stations were established. Each acted as a regulating station, in several senses; i. e., it maintained a steady stream of evacuations, utilized transport to the best advantage, and assured continuous care of patients during evacuation. Signs reading "Wounded able to walk," were posted by the ambulance companies along the routes which these patients were directed to follow. The duties of stations for slightly wounded, prescribed in our regulations, were taken over by the triage.¹⁶

Field hospitals.—One hospital was located as far forward as possible, to receive, classify, and distribute all patients from the front. Near it were located a field hospital for nontransportable wounded, another for primary treatment of the gassed, and still another which received the slightly gassed and doubtful cases, and the divisional sick. The hospital for nontransportables was supplemented by a mobile surgical unit, as required, and the gas

hospital by a mobile degassing unit. Seriously sick were sent to evacuation or other army hospitals. From the divisional hospitals patients were sent by corps ambulances, trucks, and busses to corps and army hospitals.¹⁵

Medical supplies.—Medical supplies for the battalion aid stations were taken forward to the farthest point practicable by the medical carts; but as these frequently failed of this purpose, it was directed that each enlisted member of the regimental sanitary detachment carry as many supplies as possible, including an extra gas mask. Battalion aid stations were replenished from the nearest source available—a regimental aid station or infirmary, or the dressing station. The advance medical supply depot was located usually at the triage. Medical officers were required to inspect medical combat equipment daily and promptly to submit informal requests in order that as complete equipment as possible might be maintained.¹⁶

THE 80TH DIVISION

The 80th Division was assigned to the center of the Third Corps, with the 33d Division on its right, and the 4th on its left. The division line on the morning of September 26, 1918, ran east and west, directly south of the town of Bethincourt.¹⁷

On the morning of September 26, the 80th Division moved to the attack, and immediately captured Bethincourt; by noon, it had overcome resistance in the Bois Jure. The enemy's resistance stiffened in the afternoon, and the division was subjected to severe artillery fire from east of the Meuse River. By midnight, the right of the army objective near Dannevoux (Meuse) was reached, and the right of the division rested on the Meuse, and on the left a position was organized along the northern edge of the Bois Den Dela and the eastern edge of the Bois de Septsarges.¹⁷

On September 27, the 318th Infantry and one battalion of the 315th Field Artillery were placed at the disposal of the commanding general, 4th Division, on the left of the 80th Division, for the purpose of supporting his advance. On September 28, the 80th Division (less its artillery and the 318th Infantry), was relieved by the reserve brigade of the 33d Division. On September 29, all the artillery of the 80th Division was placed at the disposal of the commanding general, 4th Division.¹⁷

On October 3, the fronts of the 3d Division, Fifth Corps, and of the 4th Division, Third Corps, were reduced, and the 80th Division was assigned a sector between these two divisions, with the Bois des Ogons in its front. On the same date, the 318th Infantry (less one battalion) and the Artillery organizations were returned to the 80th Division.¹⁷

MEDICAL DEPARTMENT ACTIVITIES

Before arrival in this sector, Ambulance Company No. 317 had been detached and did not rejoin the division until October 16, at Waly. Ambulance Company No. 318 had been detached on August 24 and did not rejoin until October 8, at Bethincourt.¹⁸

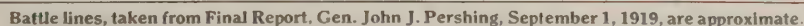
The sanitary train moved from Souilly on September 19 and reached Fromereville on the 21st. At this time, as stated, it had but two of its ambulance companies, but those detached (No. 317 and No. 318) had been replaced by United States Army Ambulance Service Sections No. 590 and No. 599, with 40 light ambulances.¹⁹

Ambulance Company No. 319 opened a dressing station at Chattancourt on September 24, where it received about 35 wounded on the 26th. It then followed the infantry advance, establishing a station at Bethincourt and another farther forward in a German dugout. Approximately 150 wounded passed through these two stations. In the interval September 27-30 dressing stations were established at Gercourt, between Gercourt and Dannevoux, between the last-mentioned town and Cuisy, and at Dannevoux, from all of which, taken together, approximately 650 patients were evacuated by the vehicles of this company and those of United States Army Ambulance Service sections attached to the division. These were supplemented by a German ambulance captured at Gercourt. On the evening of September 30 the company was relieved and returned to Bethincourt.¹⁹

Unfortunately no history of the activities of Ambulance Company No. 320 in this engagement is available other than a statement that it participated.

In his general discussion of the ambulance company service of the 80th Division the commanding officer of its sanitary train reports as follows: Litter bearers from advanced dressing stations collected some wounded from this vicinity, but most casualties were taken to the dressing stations from the battalions by litter squads of four men, furnished by the battalion aid stations or by the ambulance companies. Little or no dressing was done by litter bearers because of the incessant fire to which they were subjected. Dressing stations were placed as far forward as 0.8 km. (0.5 mile) from the line, and were never more than 1.6 km. (1 mile) behind it. During an advance 1 or 2 officers and 8 enlisted men, with the necessary equipment, would proceed to the new station as soon as it was ascertained from litter bearers that battalion aid stations were sufficiently advanced. The practice was to advance stations by the "leapfrog" method, the rear one closing after the one in advance had opened. These stations were located in barns, dugouts, or cellars. There were always two or three officers on duty at each of these formations, and relays of these and of other personnel were provided for except during periods of stress, when everyone available was on duty. The condition of patients received at dressing stations and field hospitals was uniformly good. Splinting was performed at battalion aid or ambulance company dressing stations and, if necessary, was rectified at the field hospitals. Ambulances frequently penetrated to the battalion aid stations, and always reached a point sufficiently near them to allow easy carriage by litter. At one time two companies ran parallel stations and evacuation routes. Habitually, two companies were held in reserve, but, with fresh personnel, their vehicles assisted companies on duty.²⁰

Liaison was poor at first; but after two runners had been assigned from the ambulance companies to each battalion aid station, it usually was fairly



satisfactory. These runners were charged with the duty of returning to the ambulance station and notifying it of any move made by the formation to which they were attached. In a rapid advance, contact by this means left much to be desired. Then litter bearers were questioned, for information from the regimental surgeon was often received too late or it was too indefinite to be of value. The most common defects in liaison service were the transmission of indefinite messages or their garbling in delivery, with the result that a battalion surgeon often did not know when a dressing station had recently been advanced, or the latter was in ignorance of the point to which a battalion aid post had moved.²⁰

Supplies to dressing stations and to aid stations were sent forward by ambulance on requisition, or if an aid station was not accessible by ambulance they were carried to it by bearers from the ambulance head.²⁰



FIG. 74.—Field Hospital No. 319, 80th Division, at Bethincourt, Meuse, September 27, 1918

During the period September 22–25 Field Hospital No. 317 was set up as a gas hospital at Fromereville and Field Hospital No. 318 as a triage. The other field hospitals were held in reserve until the night of September 27–28, when they were moved forward and set up at Bethincourt to operate together as a collecting hospital. These hospitals retained these sites until October 12; statistics furnished by them in the divisional medical report were to that date. The organizations at Fromereville were located in buildings on the outskirts of the ruined town, while those at Bethincourt occupied tentage. The latter place was shelled daily, but, though one tent was destroyed, no casualties occurred, as its occupants had been removed when the bombardment commenced.²¹

Field hospitals of this division were operated throughout their service in a manner that was quite unusual, their use being determined by evacuating facilities. If these were ample, the hospital or group of hospitals farthest forward operated as a triage and distributed its patients direct to appropriate evacuation hospitals; but if transportation facilities were inadequate, the hospital nearest the front acted as a collecting station in which regular hospital work was done in departments for wounded, gassed, and sick. This hospital, which was in the shelled area, had receiving and evacuating departments, but performed only sufficient paper work to keep a record of the cases that passed through it or died. Dressings were applied here and food administered, but operations were reduced to a minimum.²²

It was the practice to utilize the triage and collecting hospitals in the following manner: The triage was the unit first established and, accommodating, as it did, all kinds of cases, continued to act as a triage after hospitals were needed nearer the front. One or, if need be, two of these were sent forward when necessary to act as a collecting station. When a still farther advance was necessary, the former collecting station became the triage and the former triage moved in advance of them to become a collecting station.²³ Normally the triage consisted of 2 hospitals, usually combined. While 2 of the 4 divisional hospitals were furnished with British equipment and 2 with American, their organization and administration were uniform.²⁴ Usually their tents for patients were pitched in two rows of three tents each, with an open space between them. The middle tent of the front row was the receiving ward, and all patients passed through it for antitetanic serum, examination, and classification. At this point a medical officer examined and assigned the patients, a dental surgeon administered serum, 2 clerks made records, and litter squads of 8 to 16 men were in readiness. This tent had a surplus of litters stacked in front of it and a pile of blankets to replenish ambulance supplies. On one side of the receiving tent was the evacuating ward for slightly wounded, receiving patients from its rear and discharging them to the front, while on the other side of the receiving ward was a tent used as the evacuation ward for litter cases. In the rear of this line was a gas ward with a small bath tent attached, a ward for seriously wounded and shock cases, with operating facilities, and a ward for the sick and for overflow from the other tents. Ample supplies were kept on hand. Kitchens furnished not only diets but also some 2,000 or 3,000 meals a day to exhausted troops.²⁵

The dead were buried under the supervision of the chaplain.

The interior service of the hospital was so organized as to maintain personnel in groups whose members were accustomed to one another's methods. Day and night details were on duty at receiving and forwarding departments, and an operating team of 2 officers and 24 men was always available. Ward tents were so arranged that at one end patients were placed on litters, resting on trestles, near a supply of easily accessible dressings. After being dressed, they were then placed along the sides of the ward tent. Patients were not usually held longer than from one to three hours, and none longer than nine hours, the latter being the cases received during the night and evacuated at 5 or 6 o'clock the next morning. About 200 cases could be cared for at one

time in two field hospitals combined, and in emergencies probably 2,000 daily, though the number actually received never exceeded 900 in one day.²⁵

Evacuation by intradivisional transport ended at the field hospitals, but, as corps ambulances were not always sufficient for the removal thence of even the more seriously wounded, returning trucks were used to transport to the evacuation hospital all slightly wounded and slightly gassed cases. Large trucks could remove 7 litter cases or 20 sitting; smaller ones, 3 litter cases. All wounded sent to the field hospitals were evacuated.²⁶

THE 33D DIVISION

On September 5, the 33d Division began its movement, from the vicinity of Tronville-en-Barrois, where it had been concentrated, to the Verdun sector, where it relieved the French 120th Division and the right regiment of the French 157th Division, on the nights of September 7, 8, and 9.²⁷

At the opening of the Meuse-Argonne operation, the 33d Division, supported by the 52d Field Artillery Brigade, formed the right of the Third Corps. Here, its line ran from a point east of Bethincourt, east to the Meuse River, to a point just north of Regneville, 10 km. (6.2 miles) north of Verdun.²⁷

The division attacked on the morning of September 26, at 5.30. One regiment (132d Infantry) gained the objective by 10 a. m.; and some other units reached their objectives before noon. In its advance, the division captured Forges and the formidable Bois de Forges.^{27, 28}

From September 27 to October 7, 1918, both inclusive, the operations of the 33d Division on the west bank of the Meuse were characterized by no engagements of major importance. During this period, however, the troops were subjected to incessant artillery fire and gas from both banks of the Meuse.²⁷

MEDICAL DEPARTMENT ACTIVITIES

In the early part of September, the sanitary train was located at Fromereville and at Sivry-la-Perche, with the supply unit at the latter point.²⁹ On September 16, the train moved to Thierville and Glorieux, in the vicinity of Verdun, and the triage was established in French barracks at Glorieux.³⁰ Medical Department formations were then located as follows, in preparation for the operation:

Dressing station, Alexandre.

Relay and car post, Cumieres.

Dressing station and car post, Chattancourt station.

Collecting post for walking wounded, Marre.

Field Hospital No. 131, triage, Glorieux.

Field Hospital No. 132, nontransportable cases, Glorieux.

Field Hospital No. 130, gas hospital, Glorieux.

Field Hospital No. 129, in reserve, at Thierville.

Division surgeon's office, Thierville.

Headquarters, sanitary train, Thierville.³¹

The following method of evacuation was used: Carry to battalion aid post, by battalion litter bearers; thence by hand carry to nearest car post, by ambulance company bearers; by motor ambulances to triages.

Battalion aid posts throughout were close to or in advance of battalion headquarters; never farther to the rear.³² Wounded usually were received at these posts in good condition, the most serious cases, generally speaking, being those that had been gassed. As a rule, seriously wounded were not held here longer than 30 minutes, but a few were so gravely wounded that death supervened very shortly. Antitetanic serum was administered at these stations, and all fractures were splinted except those with such extensive wounds of the buttocks that splinting was impossible. Casualties from gas were caused more frequently by vesicating than by asphyxiating gases. Psychiatric cases were few. Liaison would have been better but for the fact that two of the ambulance companies belonging to the division had not rejoined it and those which remained had been depleted of their commissioned personnel in order to meet needs in regiments.³²

During this attack it was clearly demonstrated that the medical detachments of Infantry regiments could not function in the dressing of patients and at the same time carry litters. In order to insure prompt evacuation, it was found necessary to have the required number of bearers furnished by battalion commanders.³¹

Walking wounded sent to Marre went thence by trucks to the triage. Evacuation from the triage to evacuation hospitals was carried on under corps arrangements by evacuation ambulance companies.

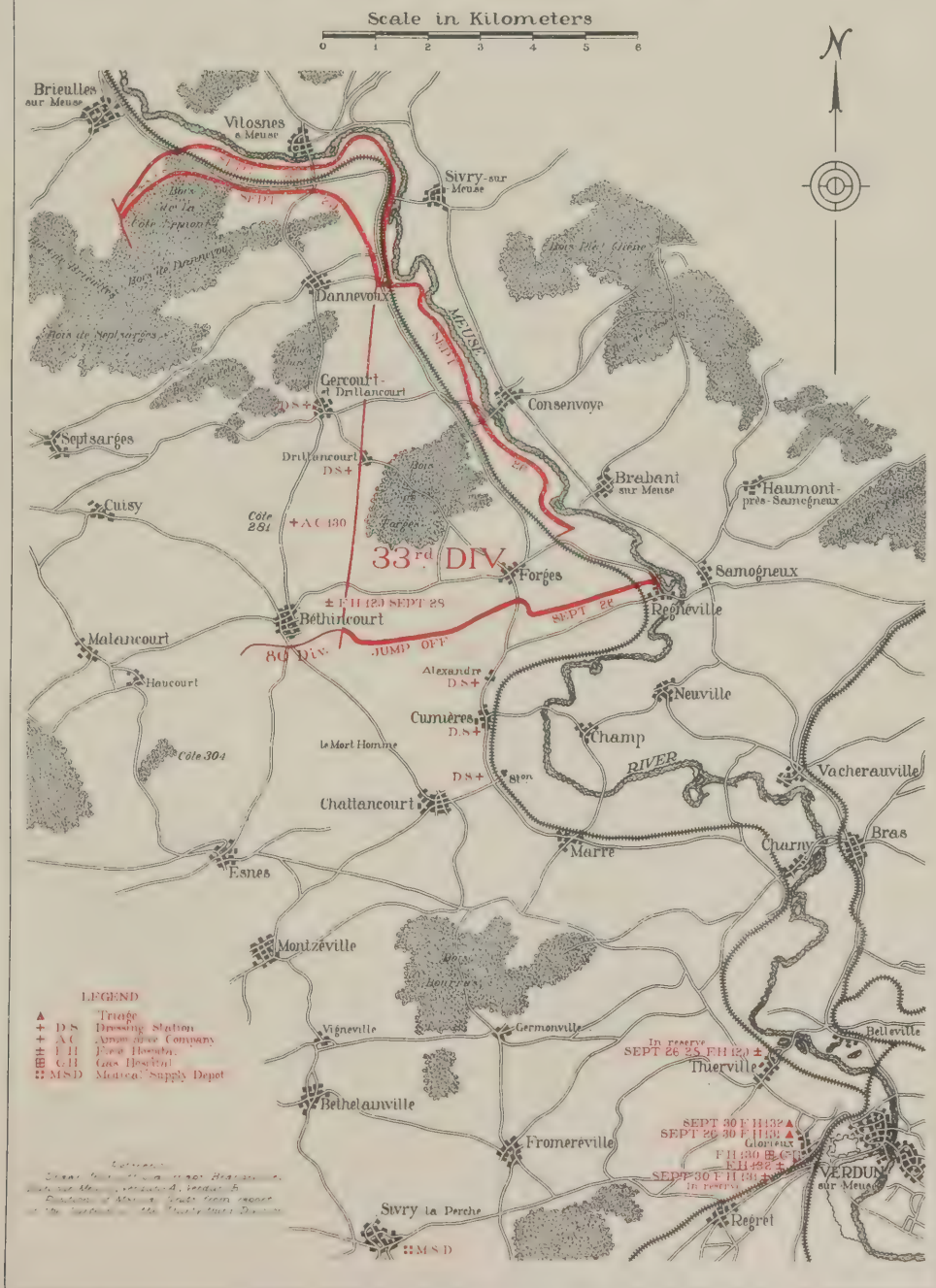
In spite of the fact that the 33d Division did not have its full quota of ambulances, evacuation was conducted successfully, through the untiring efforts of all ranks of the sanitary train. In addition to the wounded of this division, disabled from other divisions were received at its triage, together with many German prisoners.³¹

Medical detachments of Infantry regiments worked for several days and nights without cessation. Following closely in the wake of advancing troops, they established aid stations and dressed wounded under heavy shell fire from three sides, sustaining numerous casualties.³¹

SANITARY TRAIN

On September 28, Field Hospital No. 128 was sent hurriedly, with one ambulance to be used for emergency service, to a point northeast of Bethincourt, where it was ordered to establish a collecting and dressing station. It was to receive patients direct and also from the dressing station of Ambulance Company No. 130, at Cote 281, and was to evacuate either to the triage direct, or, if necessary, via the dressing station at Cumieres. Ambulance Company No. 130 was notified to evacuate to this hospital (Field Hospital No. 129) if unable to evacuate direct to the triage. Field Hospital No. 132 took over the triage on September 30, and Field Hospital No. 131 went into reserve. The director of field hospitals was ordered to supplement, if necessary, the personnel of Field Hospital No. 132 from that of No. 130 or from No. 131.³³

MEUSE - ARGONNE
OPERATION
FIRST PHASE
THIRTY-THIRD DIVISION
SEPTEMBER 26 - OCTOBER 3, 1918.



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

During the advance from September 26 to 30, Field Hospital No. 131 had cared for several thousand patients and had promptly evacuated them.³¹

After the advance, the following medical arrangements were made by the division surgeon to supersede those of September 26, the latter no longer being applicable:

	Left	Right
Bearer post locations ^b	176-827.....	Drillancourt.
	186-827.....	Do.
	195-820.....	Do.
	167-821.....	207-775.
	168-822.....	207-775.
	163-809.....	207-775.
Car posts.....	183-813.....	216-745.
	182-817.....	Chattancourt station.
	205-758.....	(Relay).
Dressing stations.....	Gercourt.....	Drillancourt
	Cote 281.....	Cumieres.

Holding parties were left at Esnes, La Claire, Alexandre, and Montzeville.³¹

REFERENCES

- (1) Operations of the Third Corps, Meuse-Argonne operation, November 25, 1918.
- (2) Map showing daily positions of front line, Meuse-Argonne operation, G-3, G. H. Q., May 24, 1919.
- (3) Operation report, 4th Division, Meuse-Argonne operation, December 10, 1918.
- (4) Report of Medical Department activities, Third Army Corps, by Col. James L. Bevans, M. C., corps surgeon (undated), 29. On file, Historical Division, S. G. O.
- (5) Ibid., 30.
- (6) Ibid., 26.
- (7) Ibid., 27.
- (8) Ibid., 28.
- (9) Ibid., 31.
- (10) Ibid., 32.
- (11) Ibid., 33.
- (12) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared by the Historical Section, the Army War College. On file, Historical Section, the Army War College (1700, 4th Division).
- (13) Report of Medical Department activities, 4th Division, A. E. F., prepared under the direction of the division surgeon (undated), Part I, 7. On file, Historical Division, S. G. O.
- (14) Ibid., Part I, 8.
- (15) Ibid., Part I, 9.
- (16) Ibid., Part I, 10.
- (17) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared by the Historical Section, the Army War College. On file, Historical Section, the Army War College (1700, 80th Division).
- (18) Report of Medical Department activities, 20th Division, A. E. F., prepared under the direction of the division surgeon (undated), Part I, 10. On file, Historical Division, S. G. O.
- (19) Ibid., Part I, 14.
- (20) Ibid., Part I, 20, 21.

^b Figures represent coordinates on reference maps. Numbers on the left of the dash represent lines running north and south; numbers on the right of the dash, lines running east and west. Intersection of lines gives position.

- (21) Ibid., Part I, 11, 12.
- (22) Ibid., Part I, 24.
- (23) Ibid., Part I, 25.
- (24) Ibid., Part I, 20.
- (25) Ibid., Part I, 25, 26.
- (26) Ibid., Part I, 21.
- (27) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared by the Historical Section, the Army War College. On file, Historical Section, the Army War College 1700 (33d Division).
- (28) Operations of the 33d Division, Meuse-Argonne operation, March 17, 1919.
- (29) Report of Medical Department activities, 33d Division, prepared under the direction of the division surgeon (undated), Part I, 4. On file, Historical Division, S. G. O.
- (30) Ibid., Part I, 5.
- (31) Ibid., Part I, 6.
- (32) Ibid., Part II, 20.
- (33) F. O. No. 10, Hdqrs., 108th Sanitary Train, September 28, 1918.

CHAPTER XXIV

SECOND PHASE ^a

ARMY OPERATIONS

The plans called for a concerted attack by the Third and Fifth Corps to carry Cunel and Romagne heights. Meanwhile the First Corps was to assist the Fifth Corps with its right division, seize the eastern crest of the Argonne with its center, so as to cut off the enfilade fire from that direction, and follow up with its left.

The attack was made at 5.30 a. m., October 4, on a front of 41 km. (25.4 miles) and continued on the 5th. It was only a partial success. The Third Corps penetrated the Bois du Fays and the Bois des Ogons, which is the southern portion of the woods south of Cunel, but was unable to clear the northern part of these woods, known as the Bois de Cunel, or to make farther advance. The Fifth Corps carried its line through Gesnes to the foot of the southern slopes of the heights of Romagne. The 1st Division, on the right of the First Corps, broke the hostile defenses at Exermont and drove the enemy north of the ridge east of Fleville. The center division, the 28th, extended along the Aire River, keeping connection with the 1st Division. Little progress was made in the Argonne.

In the meantime the French Fourth Army had been making good progress and had reached Vaux-les-Mouron, whence its right bent back toward the American left. While the enemy was still in possession of the larger part of the Romagne and Cunel heights, the two armies, in conjunction, were in a position to undertake the clearing of the Argonne.

On September 30 Marshal Foch had directed that the attack be extended east of the Meuse and, at the same time, that the French Army take over the attack on the east side of the Argonne.

On October 2 General Pershing suggested certain objections to this latter feature of the plan. This correspondence resulted in an arrangement whereby the American First Army was to continue its present attack and also undertake the active operations east of the Meuse. The object here was to clear the heights of Dun-sur-Meuse and Damvillers, relieving our troops from the flank fire across the river.

On October 7 the First Corps began the final operation for clearing the Argonne, attacking the crest of the ridge south of Cornay. The 1st Division, on the right, remained in position but continued exploitation. The 77th, on the left, was held in readiness for an advance. In the center, the 82d, assigned

^a Abstracted from Major Operations of the American Expeditionary Forces in France, 1917-1918. Prepared in the Historical Section, Army War College.

to the corps for this attack, was inserted in the line, relieving one brigade of the 28th and taking over that part of the front between Chehery and Fleville.

An attack by the 28th and 82d Divisions, directed almost due west, was launched at 5 a. m. without artillery preparation, and Chatel Chehery and the adjacent hills were taken. A firm footing was thus gained on the eastern crest; through the forest the line ran east and west about 2 km. (1.2 miles) north of Binarville. The attack was renewed the next morning, and some farther progress was made. On the night of October 8-9 the relief of the 28th Division by the 82d was completed. The advance continued, and by night the line ran east and west through Cornay. The next day the forest was clear.

This attack was an exceedingly difficult and critical operation. The advance was from the river bed straight up against precipitous heights 300 feet high, and, moreover, the sharp bend in the American lines at Fleville exposed the whole attack to enfilade from the north.

The next problem was the Bois de Romagne, which had to be taken by direct frontal attack. This was made on the 9th by the Fifth Corps, reinforced by the 1st Division and a brigade of the 91st. The country was rough and difficult and the enemy's resistance, especially by machine guns, was very strong; but steady progress was made, and on the 10th the line had been carried forward to the Romagne—Sommerance road.

In the meantime the Third Corps had advanced through the Bois du Fays and begun to penetrate the Bois de Foret. On the night of October 11 the front was almost straight from the northern tip of the Argonne directly east to the Meuse. On the 12th and 13th the army held these positions and prepared for further attack.

The attack east of the Meuse was opened on the 8th by the French Seventeenth Corps. Its line ran about east from the river at Samogneux; the American 33d Division, then of the Third Corps, was attached to the French Seventeenth Corps for this purpose, connected across the river, and held the left bank downstream to Dannevoux. The French Seventeenth Corps was to start first, the 33d Division crossing the river and joining in when the advance had progressed far enough to clear the crossing and make room for more troops on the left. The right of the line was held by the French 26th Division and the left by the French 18th Division, with one brigade of the American 29th attached.

The attack began at 5 a. m. The right made little progress, but the left gained some ground; and at 9 a. m. three battalions of the 33d Division, with machine-gun companies, crossed the river at Brabant and Consenvoye on bridges built by the engineers. This work was begun during the night and finished in the morning, under fire. For several days the fighting continued in the woods north of Consenvoye, but by the 16th these woods were cleared and the line was nearly as far advanced as that west of the Meuse.

The operations were continued, and by the end of the month had been carried to the high ground between Sivry and Wavrille. This attack broadened the field for our operations, compelled the enemy to disseminate his reserves, and made it more difficult for him to see where our heaviest blows

MEUSE - ARGONNE FIRST ARMY 2nd. PHASE

Scale in Kilometers

0 2 4 6 8 10



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

were to fall. The narrowness of the ridge limited the number of troops that could be used there; this and the cross fire or hostile artillery from the north of Romagne and Damvillers made it impossible to clear the ridge entirely at this time.

To return now to the main operation of the American Army west of the Meuse, it will be remembered that on October 11 the line had been pushed entirely through the Argonne and reached nearly straight east across the Meuse. Important changes now took place, a separate American group of armies being organized.

The new Second Army, General Bullard, took over the front from Fresnes-en-Woevre eastward on October 12. On October 16 General Pershing turned over the command of the First Army to General Liggett, established his own headquarters at Ligny-en-Barrois, and took command of the group.

Meanwhile a new general attack had been made. The French Seventeenth Corps was directed to continue its offensive east of the river. The Third and Fifth Corps were to penetrate the enemy's third position east and west of the Bois de Bantheville and the Bois de Romagne, connect their attacks near the Grand Carre Farm, at the north end of the Bois de Bantheville, and continue north. The First Corps was to hold with its left and push its right forward in conjunction with the Fifth Corps. The French Fourth Army was to attack on the same day, to outflank the enemy opposing our left.

The attack was made on the 14th, 15th, and 16th of October, on a front of 49 km. (30.4 miles). Not much progress was made, in general, by the First Army. The French Fourth Army crossed the Aisne and reached the Grand Pre-Olizey road, but was driven back to Les Terms.

On the 16th General Pershing issued instructions redefining the mission of the First Army. According to these, the enemy was to be driven to the east and across the Meuse, the advance being in concert with the French Fourth Army. The first mission was to clear the woods east of the Aisne and north of the Aire—the northern extension of the Argonne—and thus flank the enemy's position on the Aisne. But the hard and continuous fighting was telling on the troops, and there was need for rest and reorganization; so it was decided that the next general attack would not be made for some two weeks.

The First Corps, in conjunction with the French Army, undertook operations to clear the Bois des Loges and the southern part of the Bois de Bourgogne. For 10 days the fighting here was severe, but by October 26, the 78th Division had gained a footing on the high ground and in the woods east of Talma Farm, and by the 27th had driven the enemy from the whole Grandpre region.

While the enemy's third position had been pierced on Cunel and Romagne heights, there was no good line of departure here for a general attack. The Fifth Corps was therefore called upon to secure the northern edge of the Bois de Bantheville and the Third Corps to clear Cunel heights. These

operations were carried out successfully. East of the Meuse the advance was continued, forcing the enemy to employ fresh troops there.

On October 21 Marshal Foch outlined the combined mission of the French Fourth and American First Armies. On the same day General Pershing issued instructions for the coming general attack. The date was first set for October 28, but was changed later to November 1.

MEDICAL DEPARTMENT ACTIVITIES

The methods utilized in the first phase of this operation for the care and evacuation of the wounded were continued, and with increased experience were improved during its second phase.

During this phase of the operation army Medical Department units continued distributed as at the commencement of the first phase, with the following exceptions:¹ Evacuation Hospitals No. 3 and No. 5, with their ambulance companies, had been transferred on October 1 to the service of the 2d and 36th Divisions in the French Fourth Army, operating in the Champagne sector west of Forêt d'Argonne and north of Chalons-sur-Marne. The first mentioned hospital was located in the vicinity of Mont Frenet, Marne, from October 1 until it had cleared its patients, moving to Fontaine Routon on November 10. Evacuation Hospital No. 5 was located at La Veuve, Marne, until October 23, when it moved to Staaden, Belgium, to join Mobile Hospital No. 9 in the service of the 37th and 91st Divisions then operating under French command. Mobile Hospital No. 7, recently equipped in Paris, joined at La Veuve on October 3, was moved to Ferme Suippe on October 7, functioning there until October 15 and moving then to Somme-Py. These places were in the vicinity of Mont Frenet. On October 7 Evacuation Hospital No. 14 was moved from Villers-Daucourt to Les Islettes. Evacuation Hospital No. 15 moved from Revigny to Glorieux, Verdun, where, on October 13, it was established to receive wounded from the Third Corps and to assist in caring for wounded from the French Seventeenth Corps, which on October 8 had begun an attack east of the Meuse.

Personnel of Evacuation Hospitals Nos. 20, 22, and 23, which arrived in the interval October 1-7, were distributed among other hospitals which were being taxed to the utmost. The personnel of Evacuation Hospital No. 21 on its arrival (October 17) was assigned to service with Army Red Cross Hospital No. 110 at Villers-Daucourt.²

Army medical units during the second phase of the Meuse-Argonne operation were located as follows, their arrival at the locations mentioned being on the dates noted:³

Evacuation Hospital No. 4, Fontaine Routon, September 14, moved to Fromereville, Meuse, October 29.

Evacuation Hospital:

No. 6, Souilly, Meuse, August 28.

No. 7, Souilly, Meuse, August 28.

No. 8, Petit Maujouy, Meuse, August 28.

No. 9, Vaubecourt, Meuse, August 30

- No. 10, Froidos, Meuse, September 20.
 No. 11, Brizeaux-Forestieres, Meuse, September 21.
 No. 14, Villers-Daucourt, Marne, September 21, moved to Les Islettes, Meuse, October 7.
 No. 15, Revigny, Meuse, September 21, moved to Glorieux, October 13.
 No. 16, Revigny, Meuse, October 15.
 No. 20 (personnel only), Souilly, October 1.
 No. 21 (personnel only), Villers-Daucourt, Marne, October 17.
 No. 22 (personnel only), Souilly, Meuse, October 7.
 No. 23 (personnel only), Souilly, Meuse, October 7.
- Army Red Cross Hospital—
 No. 110, Villers-Daucourt, September 24.
 No. 114, Fleury-sur-Aire, September 18.
- Mobile Hospital—
 No. 1, Les Clairs Chenes, Meuse, September 24; moved to Fromereville, October 9, and to Esnes, Meuse, October 27.
 No. 2, Chateau de Salvange, Meuse, September 24.
 No. 4, La Grange-aux-Bois, Marne, September 29, moved to Cheppy, Meuse, October 27.
 No. 5, Les Placys, Meuse, September 24.
 No. 6, Deuxnouds, Meuse, September 29, moved to Varennes, Meuse, October 17.
 No. 8, Deuxnouds, Meuse, October 15.
- Neurological Hospital—
 No. 1, Benoitte Vaux, Meuse, September 5.
 No. 3, Nubecourt, Meuse, September 20.^b
- Evacuation Ambulance Company—
 No. 1, Souilly, September 21.
 No. 2, Fontaine Routon, Meuse, September 14, moved to Fromereville, Meuse, October 29.
 No. 5, Souilly, Meuse, October 23.
 No. 6, Les Islettes, Meuse, October 11.
 No. 8, Fleury-sur-Aire, Meuse, September 20.
 No. 10, Froidos, Meuse, September 23.
 No. 12, Vaubecourt, Meuse, September 23.
- Base Hospital No. 83, personnel only, Revigny, September 20.
- Gas Hospital—
 No. 2, Julvecourt, Meuse
 No. 4, Rarecourt, Meuse
 No. 1, Rambluzin, Meuse
 No. 3, Verrieres, Marne.
- } Operated by Ambulance Company
 } No. 108 to October 12.

^b After evacuation of war neuroses from the field hospitals to the neurological units at Nubecourt and Benoitte Vaux they were again transferred to Base Hospital No. 117, at La Fauche. Every effort was made to prevent the association of these cases with patients who had been actually gassed or with the wounded.

Contagious hospital, Verrieres, Marne.

Contagious hospital, Benoite Vaux (French).

Ambulance Company—

No. 42 (personnel only), Fleury-sur-Aire, October 29.

No. 108 (personnel only), Rambluzin.

No. 120, Villers-Daucourt, Marne, September 26.

Field Hospital—

No. 41, Villers-Daucourt, Marne, September 21.

No. 42, Cheppy, Meuse, October 31.

Medical supply depot, Varennes, Meuse, October 10: Souilly, Meuse,

September 14; Vaubecourt, Meuse, September 16; Les Islettes,

Meuse, October 4; Fleury-sur-Aire, Meuse, October 1.

The following units were detached and assigned to the Second Army on October 12:²

Evacuation Hospital—

No. 1, at Sebastopol.

No. 2, at Baccarat.

No. 12, at Royaumeix.

No. 13, Justice group, Toul.

Mobile Hospital—

No. 3, at Rosieres.

No. 7, Somme-Py (on November 7).

No. 39, at Aulnois.

Provisional Evacuation Ambulance Company No. 1, Sebastopol.

Evacuation Ambulance Company No. 4, Royaumeix.

It had become evident that it would be impossible to evacuate casualties by any road straight through the Fifth Corps sector and that oblique evacuation to the First and Third Corps sectors was the only recourse. Though the use of such routes of evacuation violated an established principle, there was no alternative.²

During October the number of evacuations was greatly increased on account of a severe influenza epidemic. At this time influenza attacked the First Army, whose evacuation service was already overburdened, and for a while it appeared that its ravages would seriously affect military operations both by depletion of the troops and by overwhelming the sanitary formations.²

The methods followed were sorting, as carefully as though they were wounded, all men who showed signs of influenza, masking all who were affected, transporting uncomplicated cases in ambulances carrying no other class of patients to a special hospital at Revigny set apart for them, and similarly removing all cases evidencing the slightest signs of pneumonia to a special hospital hastily established at the village of Brizeaux, under the charge of expert clinicians, and keeping the unaffected in the open air while influenza was widespread. The morbidity and mortality rates from this epidemic at the front were actually lower than those of troops in the training areas and in the base sections.²

The influenza epidemic did not stop military operations, but it slowed them perceptibly; then when its peak was passed the renewed vigor of the operation increased the already heavy strain upon the Medical Department.⁴

It was the established military practice to withdraw a division upon signs of distress and to replace it with a fresh one, if necessary, from the Second Army, not yet engaged in an operation. This reduced the number of men who otherwise would have required hospitalization because of exhaustion, a very fortunate thing for the Medical Department. A rest camp for the reception of 5,000 patients from the First Army was proposed to care for men who would be fit for duty within a few days, but its establishment was prevented by lack of Medical Department personnel. Such a camp would have greatly relieved the difficulties of evacuation from hospitals in the army area, lessened congestion in base hospitals, and secured the retention at the front of many thousands of effectives who were lost to their organizations for several weeks by reason of having left the zone of the armies. The need was met to a certain extent by the corps hospitals, which received and retained patients returnable to duty within a few days.⁴

For this, as well as for other reasons, close liaison was necessary between the chief surgeons of the corps, represented by the commanding officer of their sanitary trains, with the divisional hospitals on the one hand and the evacuation hospitals on the other. The great number of evacuation and special hospitals in the army area increased the difficulties of ambulance evacuation and caused confusion, delays, and waste of transportation. At one time, in October, 1918, there were 11 hospitals in different places draining the front of one corps. Hospitalization resources and the military situation often determined the location of these units, but experience in this operation demonstrated the desirability of grouping hospitals wherever practicable, and condemned the establishment of separate institutions for special classes of cases. The ideal evacuation arrangement was attained when the number of evacuation points was minimized and evacuation hospitals generalized; that is, prepared to receive all kinds of casualties. In them the wounded were sorted under more favorable circumstances than farther forward and were more readily evacuated to base hospitals.⁵

Reports from evacuation hospitals, formerly called for daily or twice daily, later were required every four hours. These were on prescribed forms, specifying whether patients were or were not coming in rapidly, whether the hospital making the report could or could not take care of the cases being received, and whether it would or would not have to evacuate in a few hours.⁵

In the week of October 17-23, 29,426 evacuations were made on 74 hospital trains. These figures equal the total number of French evacuations for one month during the most intensive fighting of the Verdun defensive of 1916. In one day—October 17—5,910 evacuations were made by train. For a part of the Meuse-Argonne operation, evacuations were made at the rate of a division a week.⁵

REFERENCES

- (1) Medical activities in the Zone of the Armies, by Colonel A. N. Stark, M. C. (undated), 14, On file, Historical Division, S. G. O.
- (2) Ibid., 15.
- (3) Report on Medical Department units, First Army, by the chief surgeon, First Army, February 6, 1919. On file, Historical Division, S. G. O.
- (4) Medical activities in the Zone of the Armies, by Colonel A. N. Stark, M. C. (undated), 16. On file, Historical Division, S. G. O.
- (5) Evacuation system of a field army, by Colonel C. R. Reynolds, M. C., undated. On file, Historical Division, S. G. O.

CHAPTER XXV

SECOND PHASE—Continued

FIRST CORPS

On October 4, an attack was launched by the First Corps with, from left to right, the 77th, 28th, and 1st Divisions, all with four regiments in line. The 82d Division (less Artillery), in the vicinity of Varennes, and the French 5th Cavalry at Le Claon, were held in reserve. With no artillery preparation, the Infantry, accompanied by tanks and preceded by a rolling barrage, left the point of departure at 5.25 a. m. The 1st Division, overcoming strong resistance, captured Montrefagne woods. The 28th Division advanced its right brigade at Chehery on the east bank of the Aire, but its left brigade and the 77th Division, viciously opposed by machine guns, and under a heavy counterbarrage which inflicted serious losses on them, were unable to advance.¹

On October 5, the 1st Division, after an advance of 2 km. (1.2 miles) succeeded in taking Ferme d'Arietal and in occupying Hill 240 in force.¹

During the night October 6-7, the Bois de Moncy was cleared of the enemy by our troops who had worked around from the west. The 82d Division, with Artillery (which had rejoined the division at Varennes on the afternoon of October 5), had been brought up to the front line during the night.¹

On October 7, at 5 a. m., the 82d Division attacked on the 28th Division front, between Fleville, exclusive, and Chatel Chehery. Between Chatel Chehery and Apremont one regiment of the 28th Division was in line and aided in this flank attack on the forest. During the afternoon, Hills 180, 223, 244, and Chatel Chehery were captured, and the enemy was forced to evacuate Le Chene Tondou, but clung with great tenacity to the high ground above Chatel Chehery and Cornay, causing heavy losses among our assaulting troops. At 5 p. m., the 1st Division passed under the temporary command of the Fifth Corps.¹

On October 8, the attack was resumed, and resulted in moderate irregular advances.¹

Early in the morning of October 9, a brigade of the 82d Division, held in reserve, was brought up, and relieved the 28th Division, which moved to the vicinity of Varennes.¹

On October 10, one regiment of the 82d Division relieved elements of the 1st Division east of the Aire on the line Fleville—west edge of Bois de Boyon; and the 78th Division, which had been in the First Corps area for several days, was assigned to the corps and moved up to the front area. During the night October 10-11, the enemy withdrew all but a few units to the north bank of the Aire River, and thence their line ran east to the woods north of Sommerance. During all these operations the advance was greatly hindered by the destruction of roads in the northeastern part of the Argonne.¹

At this period it was considered probable that the enemy line might be broken, in view of which eventuality the French 5th Cavalry Division and the 78th Division were brought up in close reserve, ready to exploit any such success. However, while the 82d Division advanced their right to Sommerance and to the town of St. Juvin, the 77th met determined resistance from the northern part of Grandpre, and the wooded ridges beyond, which effectually prevented its progress.¹

On October 14, at 8.30 a. m. the 77th and 82d Divisions attacked and advanced about 2 km. (1.2 miles) and took Hill 182, occupied Le Ravin-aux-Pierres and the road to St. Georges, at the same time establishing a position north of the Aire. Flanking artillery fire from enemy batteries in the Bois de Bourgogne and wire in the vicinity of St. Juvin caused us losses and considerable delay.¹

A continuation of the attack of the First Corps with objectives Imecourt—Alliepont—north edge of Bois des Loges—Haute Batis Ferme, was directed. On October 15, but without success, because the enemy positions in the Bois des Loges and Bois de Bourgogne were too strongly organized and their concentration of artillery too effective, the attack was made. During the night of October 15–16 the 77th Division was relieved by the 78th Division.¹

On the morning of October 16 the 78th Division attacked and succeeded in occupying the lower part of Grandpre, but could realize no further progress.¹

From now until the end of the month careful preparations were made, including local operations, looking toward the acquisition of positions tactically more advantageous. The 78th Division drove the enemy from the southern ridge of Bois de Bourgogne and occupied Talma Ferme and Bellejoyeuse Ferme. The 82d Division took possession of the northern slope of Ravin-aux-Pierres. The 77th Division was held in reserve. The 80th Division, which had arrived in the First Corps area on October 25, was assigned to the right half of the sector of the 82d Division, the relief of which division by the 80th Division and the 77th Division, except for an outpost screen, was effected during the night October 30–31.¹

MEDICAL DEPARTMENT ACTIVITIES

Evacuation from the front was continued by the methods and to the hospitals noted in the history of the First Corps in the first phase of this operation (p. 525).

Evacuation Hospital No. 14 moved forward to Les Islettes on October 7. While this move did not materially alter the situation otherwise on the left flank, it was of considerable value in shortening hauls. Army Red Cross Hospital No. 110, at Villers-Daucourt, never received large numbers of patients owing to its position on the inactive flank. Evacuation Hospital No. 10, at Froidos, and Army Red Cross Hospital No. 114, at Fleury, on the more active eastern flank, received most of the cases.

On October 17 Mobile Hospital No. 6 was established in a field just outside of and north of Varennes, on the main road, where it was rather far back for service to nontransportable wounded but much more accessible than

formerly. On the same date the corps rest camp moved to the same point and continued to function as before until the armistice was signed. It was very active, retaining as many cases as possible but sending those needing further care to Evacuation Hospital No. 9, at Vaubecourt, and to Evacuation Hospital No. 16 and Base Hospital No. 83, at Revigny.²

On October 24 the following plan of evacuation of sick and wounded was published in annex 8, Field Order 85, First Corps. This continued in effect throughout this and the third phase of the operation.

* * * * *

7. Plan of evacuation of sick and wounded.

1. *Sanitary organization.*—(a) Battalion aid stations, relays of litter bearers, and regimental aid stations will be established by regimental surgeons under the supervision of their respective division surgeons. In no case will a battalion or regimental aid station be located at the same place as the regimental P. C.

(b) Sorting and advance dressing stations (triaux) will be established as follows:

78th Division, vicinity of Marcq.

77th Division, vicinity of St. Juvin.

80th Division, vicinity of St. Georges.

These stations will be provided with cut-out on the traffic route for the purpose of avoiding traffic congestion. Officers will see that such provisions are carried out and that the traffic is free at all times.

Regulations governing evacuation from triages will be as published in Memorandum G-1-48, these headquarters, September 3, 1918.

(c) *Evacuation points.*—

All troops of First Corps and within its sector

Nontransportable.....	Mobile Hospital No. 6, 1 km. NE. of Varennes. Mobile Hospital No. 2, Chateau Salvange. Mobile Hospital No. 4, La Grange-aux-Bois.
Seriously wounded (lying)----	Evacuation Hospital No. 14, Les Islettes. A. R. C. Hospital No. 110, Villers-Daucourt. Evacuation Hospital No. 11, Brizeaux. Evacuation Hospital No. 10, Froidos. A. R. C. Hospital No. 114, Fleury.
Gassed.....	Gas Hospital No. 4, Rarecourt. A. R. C. Hospital No. 110, Villers-Daucourt.
Slightly wounded (sitting)----	Evacuation Hospital No. 9, Vaubecourt, by way of First Corps relay station, 1 km. NE. of Varennes.
Sick.....	To First Corps rest camp and relay station, 1 km. NE. of Varennes. Base Hospital No. 83, at Revigny.
Neurological cases.....	Nubecourt.
Contagious diseases.....	Verrieres.

French

Sick, wounded, and gassed.... A. R. C. No. 110, Villers-Daucourt.

(d) *Evacuation routes.*—

To hospital NE. of Varennes, St. Georges—St. Juvin—Fleville—Baulny—to destination.

Marcq—Cornay—Chatel Chehery—La Forge—Pleinchamp Ferme—thence south via Baulny to destination.

To hospitals at Les Islettes, La Grange-aux-Bois, Verrieres, Villers-Daucourt, by routes prescribed above to Baulny, thence via Varennes—Neuvilly—Clermont—Les Islettes—La Grange-aux-Bois—Ste. Menchould—Verrieres to destination.

To hospitals at Rarecourt, Chateau Salvange, Froidos, Fleury, and Nubecourt, via Baulny—Varennes—Neuvilly—Clermont—Auzeville—Rarecourt—Froidos, and Fleury to destination.

To hospitals at Brizeaux-Forestieres, and Vaubecourt, via Baulny—Varennes—Clermont—Les Islettes—Futeau—Brizeaux-Forestieres to destination.

(e) Army and corps troops (both French and U. S.) will use the evacuation system and facilities of the nearest division.

(f) The sanitary units of the Eighty-second Division will be held subject to the call of the corps surgeon for use where needed. If this division reinforces the line, it will use the sanitary organizations and system of evacuation of the division it reinforces or relieves.

(g) If additional transportation is needed, call will be made on the corps surgeon, who has at his disposition the ambulance companies of the Eighty-second Division and those of the corps.

(h) The corps surgeon is at present located at No. 89 Rue Basse, Rarecourt, telephone number "Buster 15." Commanding officer, corps sanitary train, is located at No. 60, Rue Basse, Rarecourt, telephone "Buster 36."

2. Army medical supply parks.

Park E at Les Islettes.

Park C at Souilly.

Park D at Vaubecourt.

* * * * *

8. Evacuation of animals.

(a) Division collecting stations will be established by each division to which sick and wounded animals will be evacuated within the division. The location of these collecting stations will be reported to the corps veterinarian (Buster 39) immediately.

(b) Corps advance collecting point, in bend of river, one-half km. north of Varennes.

(c) Army evacuation station, Aubreville.

(d) Evacuation routes.

1. From division collecting stations to corps advance collecting point overland, avoiding prescribed traffic routes. By corps unless otherwise ordered.

2. From corps collecting point to army evacuation station—Varennes—Cote des Perrieres—Pte. Boureuilles—Rochamp Ferme—Abancourt Ferme—Cross the Neuville—Clermont road south of Neuville bridge, thence south two and one-half km. to crossroads on the Neuville—Clermont road (keeping to trail on east side of road), thence east to Aubreville. By corps.

(e) Details of evacuation from the division collecting station will be arranged by division veterinarians directly with the corps veterinarians.

(f) In case of necessity, the corps veterinarian may call upon the corps remount officer for seventy-five (75) mounted men to assist in evacuations.

* * * * *

The procedure for burials was covered by paragraph 11 of the same order, the only change from previous orders being provisions that two companies of Pioneer Infantry be detailed to each division in line instead of one as heretofore. They worked as before under the division sanitary inspector. Burial of dead during the Meuse-Argonne operation was performed very satisfactorily in the First Corps by this method. Dead horses gave much more trouble, but these also were disposed of with gratifying promptness. Sanitary conditions were very much improved. There were some cases of intestinal diseases, but they were never as numerous or severe as in the Chateau-Thierry region.

The chief surgeon of the corps reported that: Aside from road congestion the other feature giving us most trouble was the scattering of evacuation hospitals over a wide area. The difficulties resulting from this have been

previously discussed and need not be repeated. Grouping of evacuation hospitals to the utmost practicable limit is much to be desired. This would probably have been difficult to accomplish in the Argonne, but nevertheless the principle remains the same. In future operations of a similar character every effort should be made to secure this concentration.³

The system for evacuation of wounded prescribed in memorandum dated September 18 and quoted above in the history of the First Corps during the first phase of the Meuse-Argonne operation would have proved very satisfactory had the corps retained the same divisions permanently, or even for a considerable time. Sometimes, however, divisions were not in the corps long enough to familiarize themselves with the order in question.

THE 77TH DIVISION

On October 4, at 5.30 a. m. the Infantry of the division attacked the enemy strong position. Enemy machine guns were still in position and fire from them was encountered immediately. On this occasion the French attacked in conjunction with our left, but their advance was again checked. Because of the location of the enemy machine-gun nests they were difficult to take, and owing to their number, our determined local attacks only resulted in heavy casualties. The aim of the 54th Brigade was to advance to the line held by the "Lost Battalion" at Charlevaux Mill. Recognizing the fact that passage through the enemy wire and trenches, even after a careful artillery preparation, would probably be unsuccessful, one battalion of the 307th Infantry was directed to move well to the right and endeavor to pass by a ravine around the left flank of the enemy wire, flanking him out and cutting his rear in the attempt to reach the "Lost Battalion" by this means. Late in the afternoon two companies of the 307th Infantry succeeded in passing through the wire by the left flank of the enemy position, and by nightfall had found the battalion. With the exception of the changed position of these two companies, the division line was the same as it had been on the previous day.⁴

On October 5, the attempt to advance was continued. The left of the 154th Brigade simply made a demonstration, as was the case along the front of the 307th Infantry, while to the extreme right of the 307th Infantry the attempt to pass around the flank was resumed. This movement progressed very slightly owing to the resistance met with, and to the fact that from time to time the troops encountered light wire around which they had to work, but the advance progressed steadily, and by nightfall an entire battalion was on the flank of the enemy's position, working toward the "Lost Battalion." On the left of the position, in front of the 308th Infantry, no progress had been made by 11.30 a. m. An attack with one battalion of the 307th Infantry and a part of the 308th Infantry was then launched. On this occasion the French were to have assisted us, under arrangements made by higher authority. This assistance failed to come, however, and our attack, which lasted from 2.30 to 5 p. m., was unsuccessful.⁴

On October 6 the attempt to break the enemy lines and relieve the "Lost Battalion" was continued. On the part of the 307th Infantry (154th Brigade) there was a demonstration against the enemy front by one battalion and the battalion which had passed by the flank continued its advance toward the "Lost Battalion." This movement was extremely slow because of the determined resistance of the enemy and the difficulties of the terrain over which the advance was being made. In front of the 308th Infantry an attack was again launched by part of the divisional reserve and of the 308th Infantry. This attack again failed and our troops were retired to the position from which they started. Late in the evening of the 6th word was received that the flanking elements of the 307th Infantry were well to the front and were approaching the "Lost Battalion."⁴

On October 7, while the 307th Infantry was approaching the "Lost Battalion," word was received that the 308th Infantry had penetrated the enemy position and had reached and relieved this battalion. At the end of the day the entire command of the 154th Brigade was on a line which extended generally northeast from the direction of Charlevaux Mill. The 153d Brigade had pursued the withdrawing enemy and had established their line north of the road west of the crossroads at La Viergette, thus making an advance of about 2 km. (1.2 miles).^{4, 5}

On October 8, the right brigade (153d) continued its advance north of La Viergette and by night had established its line along a narrow-gauge railroad in Bois de Chatel. The brigade on the left (154th) spent the day in reorganizing its forces and in resting.⁴

On October 9 the advance continued steadily, though slowly, through Forêt d'Argonne.⁴

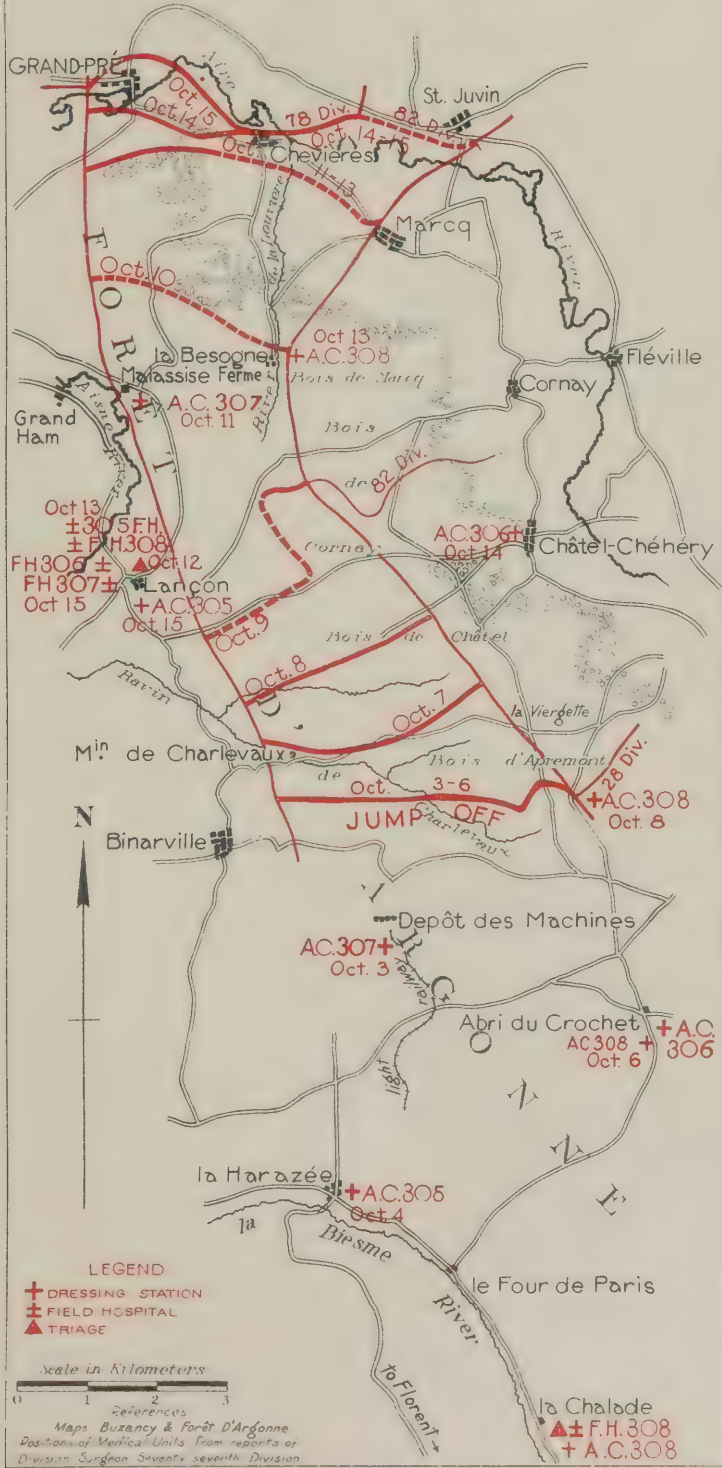
On October 10, the 153d Infantry Brigade led the advance of the division, being supported by the 154th Infantry Brigade. The objective for the day's attack was a line of hills south of the Aire River. The 306th Infantry on the left and the 305th Infantry on the right advanced through La Besogne to the Aire River at Chevieres and Marcq, one battalion of the 306th Infantry going northwest of the woods just south of the river at Grandpre. During the night following, the river was crossed by patrols, one of which made its way into the town of Grandpre.⁴

On the morning of the 11th there was a reorganization of the division front so that again the 154th Brigade was in the front line, the 307th Infantry on the right, and the 308th Infantry on the left. The general line occupied by the command at this time was the edge of the Bois de Negremont, south of Grandpre, to the edge of the woods immediately south of Chevieres, with detachments forward along the line of the railroad and the road immediately south of the Aire River, and in Chevieres.⁴

On October 12 attempts were made to cross the Aire, which was without bridges or fords other than immediately in front of Grandpre and Chevieres. These attempts were unsuccessful, being repulsed by heavy machine-gun fire and by artillery and rifle fire from the heights north of the Aire River.⁴

MEUSE-ARGONNE

2ND PHASE 77 TH DIVISION



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

On October 13 the troops of the 154th Brigade rested and were reorganized. The 153d Brigade, while holding the line along the south bank of the Aire River, was prepared to launch an attack on St. Juvin from the south and east. Accordingly, the 306th Infantry was moved to a position 1 km. (0.6 mile) west of Cornay, preparatory to the attack.⁴

On October 14, at 8.30 a. m., the 306th Infantry started the attack, its first battalion advancing through Marcq for a frontal attack on St. Juvin. Heavy consolidated barrages were put down on our troops by the enemy and severe losses were sustained. Seven officers of one regiment were killed and as many were wounded in this attack. An additional battalion was sent to execute a flanking movement on the town to the right with the third battalion in close support. The river was crossed by the attacking battalions, and St. Juvin was taken, as well as Hill 182, north of St. Juvin.

On October 15 the 153d Brigade attacked at 7.30 a. m. Enemy resistance was very strong, and all of our efforts met with terrific barrages and machine-gun fire. The enemy defensive position was so strong that it was impossible for us to advance. The brigade suffered severe casualties, and its effective strength of both officers and men was greatly reduced. Troops of the 154th Brigade succeeded in crossing the Aire and in entering Grandpre.⁴

On the night of October 15-16 and on the morning of the 16th, the 77th Division was relieved by the 78th Division. The 153d Brigade was then marched to Campe du Bouzon. The 154th Brigade was moved to the vicinity of Chene Tondou and Abri du Crochet.⁴

MEDICAL DEPARTMENT ACTIVITIES

Owing to terrific machine-gun fire and the shelling of all roads, it was often impossible to remove the wounded before nightfall, but in spite of this the average time required for the transport of wounded to the field hospitals was only from three to eight hours. Difficulties of removal were augmented by congestion of roads, for it had proved impossible to reserve certain of these, which had been attempted, for removal of casualties.⁶

The sanitary units of the division were disposed as follows at the commencement of the second phase of the operation: Ambulance Company No. 305, at La Harazee; No. 306, at Abri du Crochet; No. 307, at Depot des Machines; No. 308, at La Chalade. The field hospitals were at Florent, except No. 308, which was at La Chalade.⁶ On the 4th of October, the dressing station of Ambulance Company No. 305 was moved into French-constructed dugouts near La Harazee, this organization working in conjunction with Ambulance Company No. 307. The length of bearer routes at this time was 8 km. (5 miles). By the evening of October 5, Ambulance Company No. 305 was relieved by Ambulance Company No. 307, and went into rest at La Harazee. The next day Ambulance Company No. 306 was in rest at Camp Kopp, having been relieved by Ambulance Company No. 308, which also detailed nine men to each of the Infantry battalions it served.⁶ On October 8 Ambulance Company No. 305 established a car-post and dressing station at La Harazee, where after suitable treatment, especially of shocked cases,

it loaded them on the tramway cars, which, operated by Ambulance Company No. 307, ran to the Depot des Machines. At that place patients were transferred to ambulances and taken to the triage (Field Hospital No. 308 at La Chalade). The same date, October 8, Ambulance Company No. 307 evacuated in some six hours approximately 300 sick and wounded from the "Lost Battalion." The majority were suffering from exhaustion and lack of food, but about 30 per cent were wounded or gassed. The ambulance posts at this time were at Binarville and at the Depot des Machines. Ambulance Company No. 308 evacuated 131 men of the "Lost Battalion" on this date by mule-drawn and Ford ambulances, and established an advanced dressing station 5 km. (3 miles) from the Abri du Crochet.⁷ On the 10th the personnel of Ambulance Company No. 305 operating the car post at La Harazee was relieved, and the entire company went into reserve except 17 ambulance drivers and orderlies and 2 officers and 20 men, who continued to operate the dressing station there. The next day Ambulance Company No. 307 established a dressing station at Malassise Ferme, and 4 car posts, 2 of them just outside of Grandpre, 1 at La Besogne and 1 on the Grand Ham road.⁸ During the period October 11-16 it detailed 40 men to regimental aid stations and cared for 365 cases at its dressing station. On the 12th an advanced section of the triage (Field Hospital No. 308) opened at Lancon, where it received 682 cases before it closed on the 15th. The next day the remainder of the triage and Field Hospital No. 305 moved to that point to care for the sick, and Ambulance Company No. 308 established an advance dressing station at La Besogne, where the distance of the litter carriage from battalion posts averaged about 1 km. (0.6 mile) and to the ambulance post about 100 meters (109 yards).⁹ On the 14th, 1 officer and 16 men of Ambulance Company No. 306 established a dressing station in the western edge of Chatel Chehery, while Ambulance Company No. 308 established a subdressing station and a two-car post near Grandpre. Ambulance Company No. 305 on the 15th discontinued its dressing station at La Harazee and advanced 9.6 km. (6 miles) on the Binarville-Lancon road to near Lancon, and Field Hospital No. 306, for gassed cases, with Field Hospital No. 307, for surgical cases, arrived at Lancon.¹⁰ The last-mentioned unit here took over the triage from Field Hospital No. 308, which closed and went into reserve. From September 27 to October 11 it had admitted 3,284 patients, of whom 3,613 were wounded, 47 gassed, and 624 sick.¹¹ On the 16th the stations of the ambulance companies were closed and they began moving for rest to Florent and Camp Kopp, near La Chalade. Field hospitals closed on the 16th and 17th and moved to Florent, where, except Field Hospital No. 308, which acted as the division hospital, they remained in rest until the division reentered the lines.¹²

The 302d Sanitary Train had organized its surgical service to the highest degree possible. Complete operating rooms were established at La Chalade, with facilities for performing any type of operation, and all appropriate cases admitted to the triage from dressing stations were assumed to be operative unless in a marked degree of shock on arrival. This subject is further discussed in the history of the 77th Division during the third phase of this operation.¹³

The advance medical supply depot was operated with the triage and advanced with that organization, thus securing prompt delivery of supplies to the division medical department formations, but because of lack of transportation the main supply depot remained stationary and did not advance with the troops. This resulted in so lengthening the distance between the two depots that three days were consumed in making a round trip between them; but notwithstanding this fact, full and complete equipment and supplies, except a few drugs, was on hand at forward formations at all times.¹⁴

THE 28TH DIVISION

The 28th Division attacked at 5.30 a. m. on October 4, with the 55th Brigade on the right and the 56th on the left. The 55th Brigade was able to drive the enemy approximately 2 km. (1.2 miles) down the Aire Valley until it was held up by severe machine-gun fire from the Abbatale Ferme—Pleinchamp Ferme—Chatel-Chehery. The 56th Brigade made very little advance, due to the severity of machine-gun fire and heavy shell fire from the northern slope of Le Chene Tonde ridge. At noon, the division line was approximately: Ferme des Granges—La Forge (exclusive)—Le Menil Ferme—south to Le Chene Tonde ridge. Our own Artillery increased its harassing fire on enemy positions, while that of the enemy decreased in the rear areas and increased in the forward areas and front-line positions. The town of Apremont was shelled during the day with mustard gas, and our troops located there suffered considerable losses and were forced to move out of the town. By 7.05 p. m., the leading battalion of the right brigade had reached the Aire River at the foot of Cote 180 and had taken Chehery and Pleinchamp Ferme. At La Forge the situation was reported to be unchanged and as "full of machine guns; a nasty proposition to go near." At 9.25 p. m., the clearing of Le Chene Tonde ridge and the ridge west was reported as being about completed by the left brigade, and all the lines had been extended on the entire crest.¹⁵

On October 5, at 6.30 a. m., the 55th Brigade succeeded in pushing forward on the right, in spite of heavy artillery and machine-gun opposition, thus improving their positions in Pleinchamp Ferme, Chehery, Abbatale Ferme, La Forge. At 2.15 p. m., troops of the 109th Infantry were entering Chatel Chehery; and the 56th Brigade was still advancing slowly along Le Chene Tonde. By nightfall the right of the division line had straightened out westwardly to include La Forge, the rest remaining unchanged. On October 6, there was no material change in the line during the day.¹⁵

On October 7, the attack was renewed at 5 a. m. The 82d Division, which had been in corps reserve, was now in the line on the right of the 28th and took over part of the sector of the 28th Division. The objective of the attack was the line occupied by the enemy, including Cornay, Hill 223, Hill 244, and the ridges west of the River Aire. This confined the main attack to the 28th and 82d Divisions. The 112th Infantry attacked Chatel Chehery and Cote 244. Only slight resistance was encountered in entering the village of Chatel Chehery, but heavy machine-gun fire to the west of the village and from Cote 223 was opened on our troops after they had entered the town. Enemy fire

from Cote 223 enfiladed the village of Chatel Chehery; and though this hill was in the sector of the 82d Division, it was impossible for troops of the 28th Division to hold Chatel Chehery without our forces holding Cote 223, and as a consequence one company of Infantry and a machine-gun company of the 28th Division captured Cote 223 and occupied it. Cote 224 was occupied after overcoming severe resistance by machine guns. Strong patrols from the 109th Infantry, left brigade, by this time had been working up the ravines north of Bois de Taille l'Abbe and north of Le Chene Tondu, partially overcoming resistance from these points. Six companies of the 111th Infantry had worked around to the west from Le Chene Tondu, and at noon were reported as advancing north from La Viergette, in liaison with the 77th Division, on the left. At nightfall the line of the division was Hill 223 (exclusive), hill west of Chatel Chehery, Hill 244, thence generally south to the western limits of the division sector.

On October 8, the attack was again resumed at daybreak. During the morning there was very little change in the line. At 1.10 p. m. an attack was started, which developed strong infantry, artillery, and machine-gun resistance. At 5.55 p. m., one battalion of the right brigade was on Hill 244. One battalion was between Hills 223 and 244. Two battalions were in the skirmish line, 1,200 meters (1,308 yards) in advance of the crest of Hill 244. Two small battalions were at a crossroads 600 meters (654 yards) south of Drachen.¹⁵

On October 9, the 28th Division was relieved by the 82d Division.¹⁵

MEDICAL DEPARTMENT ACTIVITIES

Unfortunately no official record is available of the operations of the ambulance companies of this division during the second phase of this operation. Field hospitals were in the locations which they held in the first phase; i. e., Field Hospital No. 109 (triage), at Locheres; Field Hospital No. 110 (gas and psychic cases), at Croix de Pierre; Field Hospital No. 111 (sick), at Les Islettes; Field Hospital No. 112 (surgical), at Croix de Pierre, except that the last-named was moved, October 4, to Neuville. Field Hospital No. 109, the divisional triage, at Locheres, was closed October 4, and on October 11 followed the rest of the division to the rear for a brief rest at Bouvron. The total number of patients it had admitted while at Locheres was 3,428. The divisional supply unit was also located at this point.¹⁶

Field Hospital No. 111, at Les Islettes, receiving the divisional sick, noted a large increase in the number of influenza cases. It moved on the 13th to Ferme Boyer, thence to a French hospital near Minorville, and on October 30 to Buxerulles. One feature of the operation of this organization was provision of a dispensary which was maintained for the use of any troops in the vicinity which were without medical officers. During its existence this dispensary gave assistance to at least 10,000 patients.¹⁷

Field Hospital No. 112, located at Croix de Pierre, during the first phase was relatively inaccessible to the seriously wounded, a fact which necessitated that they be cared for at first by Field Hospital No. 109 and that Field Hospital No. 112 be moved to Neuville on October 4. Here this hospital used

a barn to excellent advantage, and in the period October 5-10 (inclusive) admitted 1,624 patients, with six deaths. After the division was withdrawn it moved to Bouvron, about 8 km. (5 miles) north of Toul, whence it moved to Essay, on the 18th.¹⁸

THE 1ST DIVISION

On October 4, at 5.25 a. m., the division launched its attack, preceded by a rolling barrage at 200 meters (218 yards). Considerable resistance was encountered from machine-gun nests in the Bois de Montrebeau and along the road running northeast of La Neuville le Comte Ferme. The enemy was strongly entrenched in wire positions in the woods north of Hill 212. The 1st



FIG. 75.—Location of Field Hospital No. 111, at Les Islettes, October 5, 1918

Brigade reached its objective at approximately 7 a. m.; the left regiment of the 2d Brigade, 30 minutes later. The right regiment was delayed by fire from the road northeast of La Neuville le Comte Ferme and from its flank. At approximately 1 p. m., the 16th Infantry had reached the third objective.¹⁹ The 18th Infantry was delayed on the southern slopes of Hill 240; the 2d Brigade was delayed by strong machine-gun resistance and artillery fire both from the front and flanks.¹⁹ At the end of the day the line extended from just south of Fleville, southeastwardly to just south of Exermont, then slightly northeastwardly to a point about 2.5 km. (1.5 miles) beyond Exermont.⁵

On October 5 the 2d Brigade (right) and 18th Infantry, on the right of the 1st brigade, were ordered to advance to the first objective.¹⁹ Following it

they were directed to proceed to the second objective (midway between first and third objective). After taking the second objective the infantry was next ordered to advance to the third objective (corps objective), there to organize and await further orders. In its advance the 26th Infantry captured Ferme d'Arietal, meeting with stubborn resistance from the enemy.¹⁹

On October 6 in conformity with corps orders, troops remained on the line reached the previous day. During the afternoon, the 26th Infantry (on the right) advanced their line by pushing out patrols to the southern slope of the hill northwest of Ferme d'Arietal.¹⁹

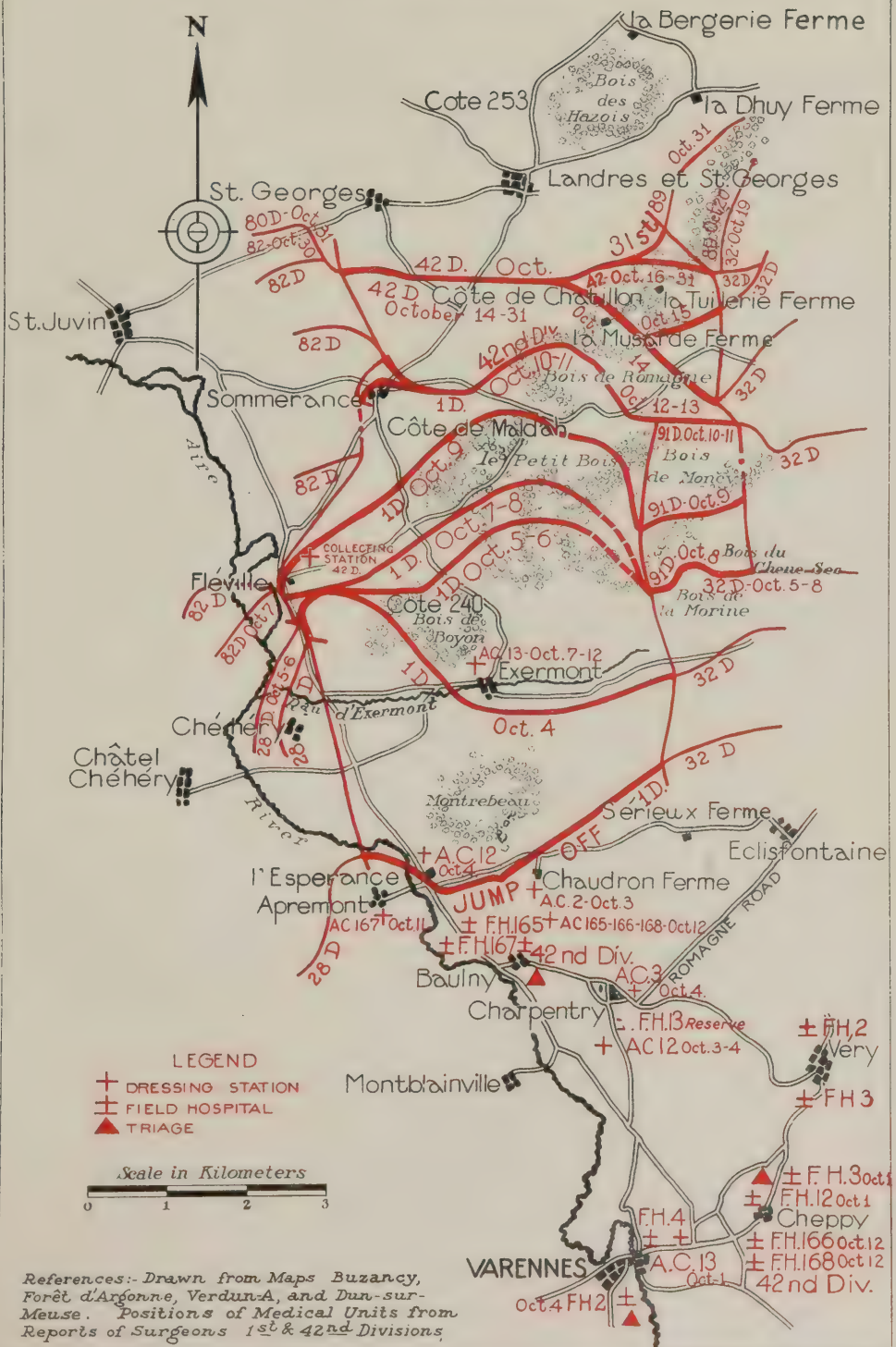
On October 7 the entire line was slightly advanced by pushing out patrols to the front and holding the ground gained. On this date, the 362d Infantry Regiment (91st Division) was attached to the 1st Division. On the 8th, the entire 181st Brigade (91st Division) was attached and the sector of the 1st Division was extended to the line Cote 269—La Tuilerie Ferme. The 1st Division was temporarily attached to the Fifth Corps.¹⁹

MEDICAL DEPARTMENT ACTIVITIES

The regimental aid stations were located in the vicinity of regimental posts of command, and, like them, were at first in cellars or first-floor rooms of partially destroyed buildings in the towns of Cheppy, Very, Charpentry, Baulny, and of villages of the area. As the attack developed, however, and the line moved forward, the regimental posts of command and regimental aid stations were located in dugouts with the line of advance. Battalion stations were located in less favorable positions, the majority in shallow ditches or holes hastily dug into a hillside or in the shelter of woods. Because of insistent enemy artillery fire and the fact that approaches to the aid stations were frequently swept by machine guns, great difficulty was experienced in evacuating the wounded from these points. In many instances the only mode of evacuation was by hand-carry for about 1 km. (0.6 mile) to the nearest point where wounded could be picked up by ambulances. Searching parties continued to go out constantly from battalion aid stations, despite exposure to shell and machine gun fire, and in this work a number of Medical Department enlisted men were wounded or killed. The character of the terrain made rescue work both difficult and hazardous. When the wounded reached the battalion stations they were given such emergency first aid as was possible and were then sent promptly to the rear.²⁰ It was almost impossible to get supplies up to these stations in adequate quantities, for everything had to be carried forward either on the person or in improvised sacks. First aid administered, therefore, was of necessity both crude and limited, intensifying the need that patients be evacuated with all possible speed to positions farther back, where more adequate treatment could be given them. In some places it was possible to evacuate the wounded from battalion to regimental aid stations, but in the majority it was found more practical for each station to convey its own wounded to the nearest collecting point accessible to ambu-

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1ST, 91ST, (181ST Brig.) & 42ND DIVISIONS 2ND PHASE



lances. From these points the wounded were taken to the nearest dressing station, where they were furnished hot drinks, dressings were applied or changed, stimulants were given, and antitetanic serum was administered.²¹

AMBULANCE COMPANIES

Ambulance companies were utilized to their utmost capacity, evacuating from the front to field hospitals and to the rear from them. Unfortunately, the evacuation ambulance companies belonging to the corps were unable to evacuate the field hospitals, and it was necessary to divert part of the divisional ambulances to that service. Whenever possible, returning ammunition and supply trucks were used for transporting the slighter cases. The haul from Cheppy to the hospitals at Clermont, Les Islettes, Ste. Menehould, etc., was long and difficult, over badly congested and shell-torn roads. Most of the evacuation from the farthest advanced positions to the advanced dressing stations was done by the personnel and Ford ambulances of United States Army Ambulance Service Section No. 649. After United States Army Ambulance Section No. 593 joined, which was when the 181st Infantry Brigade was temporarily assigned to the division (October 6), it lessened greatly the difficulties of evacuation from the field hospitals.²²

On the night of October 3-4, Ambulance Company No. 12 established an advance dressing station in some ruined buildings at Charpentry, but during the following day moved to L'Esperance Ferme, near Apremont, establishing a dressing station which remained at that point until the division withdrew. Wounded men to the number of 3,486 passed through this station. Ten of its enlisted personnel were wounded and one was killed.²²

Ambulance Company No. 3 had taken over the dressing station at Charpentry and remained there until October 12, caring for and evacuating some 5,000 cases. During part of this time the station was under shell fire. It suffered 49 casualties, with 5 deaths.²²

Ambulance Company No. 13 had reached Varennes on October 1, and there established a station for slightly wounded and walking patients. While its ambulances evacuated suitable cases, its litter bearers and officers reinforced regimental stations. Eight hundred casualties passed through the stations of this organization.²³

Ambulance Company No. 2 operated an advance dressing station at Chaudron Ferme, in some partially destroyed buildings, from October 3 to 12, giving first aid and evacuating 2,500 wounded. The animal-drawn ambulances of this company proved very valuable during the drive, as they could operate under road conditions impossible to motor vehicles.²³

The triage and surgical hospitals being located together, the dressing stations were not concerned with the sorting of cases except to direct walking wounded to the station at Varennes. The other wounded were transported by ambulance to Cheppy and there delivered to the triage. Experience in this sector demonstrated the impossibility of carrying antigas medical equipment to battalion aid stations and also the impossibility of administering antigas treatment to patients in these exposed positions. The nearest point at which

such treatment could be given effectively was the dressing station, and there relief of the most pressing conditions was all that could be attempted. Yet, in many cases it was found that the clothing could be removed at a dressing station and the gassed patient prepared so that he might be sent as quickly as possible to the field hospital, where more elaborate equipment had been installed. Surgical cases were given such emergency treatment as their condition demanded before being started on their trip to field hospitals.²¹

FIELD HOSPITALS

Flanked as it was by hills on all sides, the devastated village of Cheppy offered the most protected and convenient site for a field hospital, and Field Hospital No. 3 there exchanged tents and some equipment with medical units of the 35th Division, already installed, took over their site, and was ready to function immediately. It operated as a triage and also received slightly wounded, shocked, and gassed patients.²⁴ During the operations it cared for 6,066 patients at this site. Of gassed cases admitted, about 100 were severe, but the majority were minor burns or irritated eyes.²⁵

Field Hospital No. 12, designated to receive the severely wounded, set up four ward tents in a depression on the side of the road running from Cheppy to Very and also made use of the extensive, electric-lighted galleries and rooms which the enemy had constructed in the sides of hills. The most severely wounded patients and the operating unit were placed in these bomb-proof shelters. While at this place Field Hospital No. 12 cared for 818 patients. With its mobile surgical unit it was prepared to handle all kinds of emergency surgical cases, but corps orders forbade any operative procedures in field units. Later, however, these orders were modified to permit operations on nontransportable patients whose only hope lay in immediate surgical intervention. The wisdom of this modification was demonstrated in a number of desperate cases operated on by the surgical unit in the operating room improvised by this hospital.²⁵

Field Hospital No. 13 was held in reserve in the vicinity of Charpentry, the Field Hospital No. 2 at Varennes. The only time that the latter unit functioned in this operation was on October 4, when the Cheppy hospital sites and roads leading to them were so severely shelled that they had to be abandoned temporarily. On the morning of that day nine enemy observation planes flew, unopposed, low over this location, returning safely to the German lines. At 9 o'clock a remarkably accurate bombardment began. Tents were hastily evacuated, all patients being removed to the dugouts close by. Though considerable damage was done to tents and equipment, no casualties occurred. As soon as the first shell fell, the division surgeon sent a courier to Varennes—about 1.5 km. 0.9 mile) to the west—with orders to Field Hospital No. 2 to establish and operate there as a triage until further notice.²⁴ Other messengers were dispatched to notify ambulance companies of the change in location, and military police along the routes of evacuation were instructed to direct ambulances and walking wounded to Varennes. By 10 a. m. on October 4 Field Hospital No. 2 was ready to function and had received, treated, and

evacuated its first wounded. Up to 5 p. m. of the same day, when it closed, it had received and disposed of approximately 1,500 patients. Records were made of 1,003, and in addition some 500 patients for whom no record was made were received, examined, and given appropriate treatment.²²

MEDICAL SUPPLY UNIT

The medical supply unit of the division was moved to Cheppy and, with the large supply of American matériel found in the area, furnished ample equipment for the entire operation. The great difficulty found in distributing this to forward stations has already been discussed.²³

THE 82D DIVISION

On October 6 the 82d Division, less the 163d Infantry Brigade, relieved the Infantry units of the 28th Division on the north of La Forge. The division boundaries were as follows: Right, Fleville (exclusive)—elevation 151; left, Ferme des Granges—La Forge—Chateau of Chatel Chehery—meridian 79.8.²⁷

On October 7 the division, less the 163d Infantry Brigade (still in corps reserve), attacked at 5 a. m., the position of the brigade being the west bank of the Aire River between the Chateau of Chatel Chehery and the southwest outskirts of Fleville. The first objective included Fleville (exclusive)—Cornay (inclusive)—Hill 223 (inclusive). Hill 180 was promptly captured at 5 a. m. Hill 223 was captured at 1 p. m. At 5 p. m., while the hill was in process of organization, a determined counterattack on Hill 223 was repulsed with heavy losses to the enemy.²⁷

On October 8 the flank attack of the preceding day was continued. At 7 a. m. the front line had advanced 700 meters (763 yards), and at 9 a. m. an advance between 900 and 1,000 meters (981–1,090 yards) had been made against heavy machine-gun fire. At 4 p. m. the attack was made on the crest of the hill running west of Cornay, the sector being gained at approximately 6 p. m. Enemy machine gunners on the heights east and west of Cornay swept with deadly fire the valley over which our troops had to advance. Of the two companies which started, but 40 members reached the objective.²⁷

On October 9 the 163d Infantry Brigade, which had been released from corps reserve the day previously, relieved the 28th Division on the left, which had been holding the line, Hill 223 (exclusive)—La Viergette (inclusive). The relief was effected at 4 a. m. The division boundaries now were: Eastern, Fleville—Baulny road; western, La Viergette—La Besogne—Chevieres (inclusive). The 163d Infantry Brigade executed a turning movement on a large scale. With little enemy resistance they had reached at the end of the day a position along parallel 81, the right of the brigade refusing slightly to connect with the left of the 164th Brigade on the Decauville railroad. A battalion of the 328th Infantry, advancing, crossed the Decauville railroad and the Pylone—Cornay road. A battalion of the 327th Infantry captured Cornay at 11 a. m., after fighting of the severest nature. At dusk the counter-

attack was launched from Fleville to Cornay, inclusive, and the battalion was obliged to withdraw to the edge of the woods south of Cornay.²⁷

On October 10 the elements of the 1st Division east of the Aire River, within the boundaries of the 82d Division, were relieved by the 164th Infantry Brigade by an extension across the river of the line of the 327th Infantry. The attack was resumed at 7 a. m., the advance being made through Hill 180 and from the ridge west of Hill 223. Cornay and the ridge north of it were captured.²⁷ At the end of the day the line extended approximately from a point 750 meters (817 yards) south of Sommerance southwestwardly to the Aire 0.5 km. (0.3 mile) above Fleville, thence generally northwestwardly to Marcq (inclusive).^{27, 5}

On October 11, at 7 a. m., the attack was resumed, the first objective of the division being the line Imecourt—Champigneulle. The direction of the attack was due north. On the left an effort was made to cross the Aire and attack the town of St. Juvin. Troops advanced east of Marcq to the Aire River, but as passage of the river proved impossible the companies engaged were withdrawn to the hills east of Marcq for the night. On the right the troops crossed the river at Fleville. A battalion of the 327th Infantry reached, for the first time, the Kriemhilde Stellung at 8 a. m., but finding the position untenable withdrew to a line running east and west through the center of St. Juvin. At the conclusion of the day the brigade line ran south of this line.^{27, 5}

On October 14 the attack was resumed at 8.30 a. m. Neither division flank was able to advance because of the fact that the flank on the right and left of the division remained practically stationary. The center of the division, however, advanced through the Kriemhilde Stellung line at 11.15 a. m., but was obliged to withdraw to the St. Juvin—St. Georges road, this position being held for the night.²⁷

On October 15 the division continued the attack at 8.30 a. m. Its particular mission in this instance was to protect the left flank of the 42d Division. No advance was made.²⁷

On October 16 the attack continued at 6 a. m. St. Juvin was entered at 9 a. m., and the whole of Hill 182 was secured at 9.30 a. m. Troops advanced up the valley to the Agron River to about 0.5 km. (0.3 mile) south of Champigneulles, where they were compelled to seek shelter, without possibility of advancing or retiring for the day. During the night these troops were withdrawn.²⁷

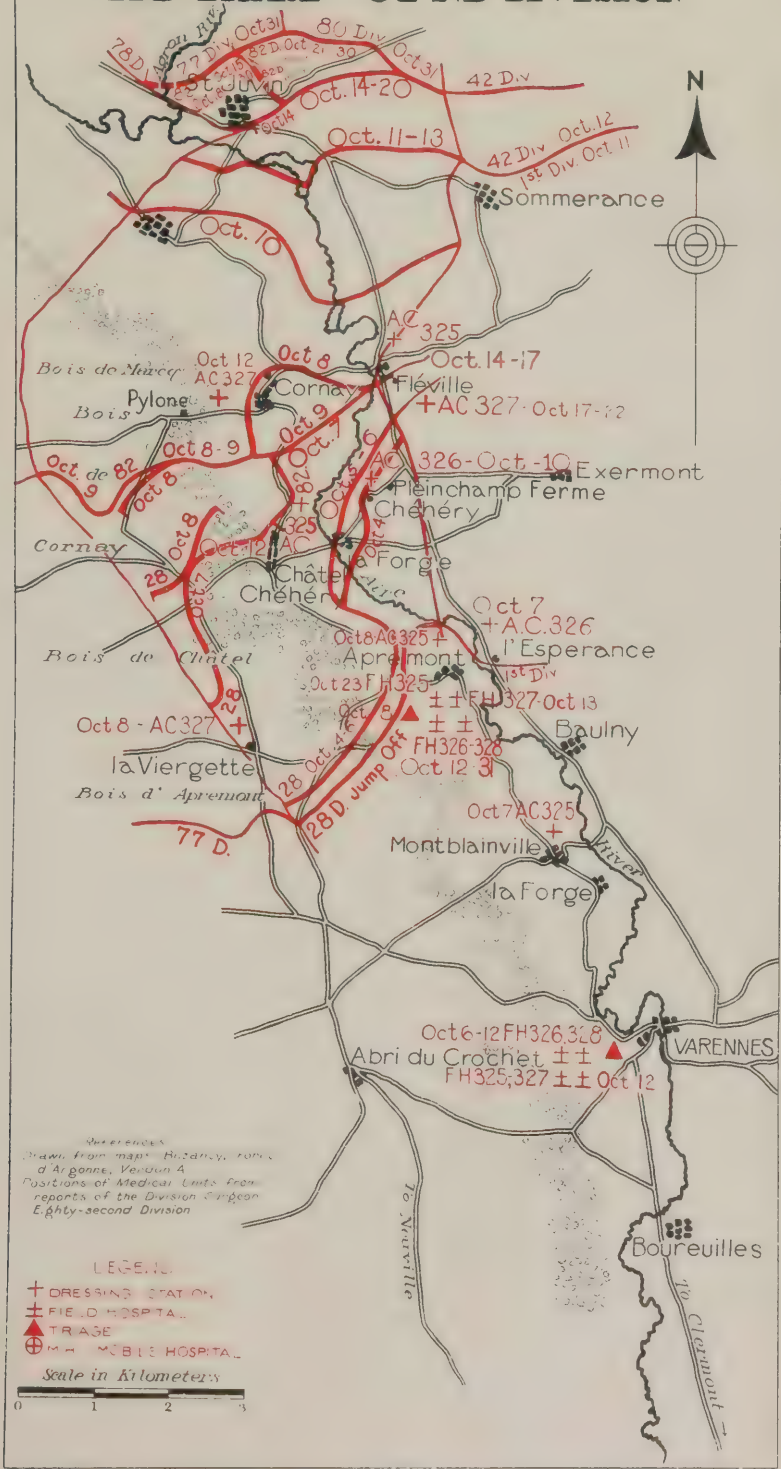
No change was made in the line on October 17.²⁷

On October 18 the western boundary of the division battle line was altered to the following line: Chatel Chehery—Marcq—Champigneulles—Resille Ferme. The remainder of the line remained unchanged.²⁷

On October 21 the 163d Infantry Brigade advanced its line along the slope north of Ravin aux Pierres. The 164th Infantry Brigade pushed forward in liaison with the 163d. The division line ran as follows: Hill 182—Ravin aux Pierres, thence to and along St. Georges—St. Juvin road.²⁷

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2ND PHASE 82 ND DIVISION



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

During the period October 22 to October 30 no advance was either ordered or attempted. On October 31 the division, less the 157th Field Artillery Brigade, attached to the 80th Division, was relieved by the 77th and 80th Divisions at 6 a. m. The division was then assembled in the Argonne Forest south of Marcq.²⁷

MEDICAL DEPARTMENT ACTIVITIES

Ambulance Company No. 327 established a dressing station, on the night of October 3, at a convenient crossroads near Neuville, the remaining companies moving, October 6, to Clermont-en-Argonne. The same night Ambulance Companies No. 325 and No. 326 and a large detail from Ambulance Company No. 328 moved to Varennes, where they arrived at 7 a. m. on the 7th. Ambulance Company No. 325 then established a station at Montblainville and Ambulance Company No. 326 one at l'Esperance. Two officers and 120 men were sent as litter bearers to serve the four Infantry regiments, and other officers and noncommissioned officers were sent as liaison personnel to brigade and regimental headquarters. The litter-bearer detail continued to function as such until the 18th. The dressing station of Ambulance Company No. 325 was moved to Apremont on the night of the 8th, for most of the wounded coming to Montblainville were being cared for by a station of the 28th Division there. Moreover, most of the wounded were being sent down the right bank of the Aire. At this time the station of Ambulance Company No. 326 at l'Esperance was the most active, cooperating with similar stations of the 1st and 28th Divisions, also established there; but immediately after the dressing station of Ambulance Company No. 325 was established at Apremont it began to receive a large number of wounded from the aid station of the 328th Infantry at Chatel Chehery. Throughout the service of this station at this point its work continued heavy, though the site was frequently shelled and some casualties occurred. As ambulances were inadequate for the large numbers of wounded, it evacuated a number of patients by truck.²⁸

On October 18 the station of Ambulance Company No. 327 was also moved, going to La Viergette, where it remained three days, though it evacuated practically no patients from this point. It moved to Pylone on the 12th. On the same date the divisional triage moved to an old German hospital about 1 km. (0.6 mile) southwest of Apremont, and Ambulance Company No. 325 moved its dressing station from Apremont to Chatel Chehery, relieving the regimental aid station of the 328th Infantry. Most of the divisional wounded on the west bank of the Aire were collected at Pylone, as the road between that place and Cornay was impassable. From this point they were sent to the dressing station of Ambulance Company No. 326, at l'Esperance.²⁹

On the night of the 14th, as all combat troops of the division had moved to the right of the Aire, this dressing station moved to Fleville, where it took over the regimental aid station of the 327th Infantry. Most of its patients were sent out by truck, for ambulances were too few to carry them; but on the station becoming overcrowded, it sent its evacuees to the dressing station which Ambulance Company No. 326 was now operating at Pleinchamp Ferme.

On the 17th Ambulance Company No. 325 was relieved at Fleville by Ambulance Company No. 327 and returned to Apremont. The almost continuous shell fire caused Ambulance Company No. 327 to abandon its station at Fleville on the 22d, the station which Ambulance Company No. 326 conducted from October 10 to November 1 at Pleinchamp Ferme now being capable of caring for all the wounded.²⁹

During this period all the ambulance company personnel available had been concentrated at Apremont to assist the triage. On October 30 Ambulance Company No. 325 again established a dressing station at Pylone to care for casualties in the division as it moved from the front lines. For a period of 36 hours and before medical department units of the 78th Division were in position to function, the ambulance companies of the 77th Division evacuated casualties developing in the relieving division.²⁹

During this engagement the ambulance transportation of the 77th Division was limited to 2 salvaged cars, 8 G. M. C., and 20 Ford ambulances, the latter belonging to United States Army Ambulance Service Station No. 647, which had joined the division. The lighter ambulances operated near the front, the heavier to the rear. These vehicles were supplemented by the trucks and ambulances of the corps sanitary train as required.²⁹

The total number of patients cared for by the three motorized ambulance companies (Nos. 325, 326, 327) from June 25, 1918, to February 15, 1919, was 13,500, but this figure does not include those carried by United States Army Ambulance Service Section No. 647 (number not known). The total distance traveled was 206,663 km. (128,337 miles), and the total casualties in the companies were 4 killed and 20 wounded.²⁹

On October 5 Field Hospital No. 325 was moved from Waly, where it had been functioning as a divisional triage and evacuating direct to army hospitals, to a point south of Clermont, where it was joined by Field Hospital No. 328 and the next day by Field Hospital No. 327. On the 6th Field Hospital No. 328 moved on to Varennes, with orders to establish the divisional triage there before daylight of the 7th. Here it was joined by Field Hospital No. 326, which cared for the gassed, and many gassed and wounded men were cared for under shell fire. On the 12th the last-mentioned hospitals moved to a point 1 km. (0.6 mile) southeast of Apremont, while Field Hospitals No. 325 and No. 327 moved to Varennes. On the 13th Field Hospital No. 327 moved to the location of the other hospitals near Apremont, and on the 23d Field Hospital No. 325, heretofore in reserve, advanced to the same point. Thereafter, until the division was relieved, the four hospitals retained this site, functioning in conjunction. All field hospitals were relieved on November 2 and moved to Les Islettes.³⁰

Field hospitals had reached the Argonne sector with very few supplies. They had left behind in the Toul area as complete an equipment as it was possible to secure for such units. Because of lack of transportation before going into action in this sector, they were able to secure only some blankets, litters, dressings, and some other most essential items, including tentage. By October 12, however, the medical supply officer had replenished the stock of

supplies to a considerable extent, for a truck train was sent back to Millery to bring up what had been left behind, and these, with the new supplies, furnished a full equipment, with the exception of sterilizing and X-ray apparatus. When the division was relieved, all this equipment was turned over to another division in exchange for that which it had brought into the field.³⁰

Except during the last 10 days at Apremont, field hospitals did only triage, gas, and medical work. After the worst of the fighting was over (about October 20) the hospitals were immobilized, tents were floored, and a rest camp of 30 wards was organized, where all cases of diarrhea and exhaustion were cared for. The largest number of these cases at any one time was about 700, all being well cared for and well fed.³¹

The commanding officer of Field Hospital No. 328 gave the following description of his establishment at Apremont:³²

The hospital in the forest 1 km. southwest of Apremont was situated back about 200 yards from the main highway and connected with it by an excellent road. It occupied nine wooden buildings, a large dugout, and an abandoned ward tent. All, in excellent condition, were wired for electricity and provided with many modern conveniences. A complete laboratory and dispensary were found intact. The immediate vicinity of the hospital was strewn with equipment, dead horses, and a few dead men. During the first 24 hours 480 patients were admitted and evacuated.

On October 13 Field Hospital 326 joined to act as a gas hospital, operating under canvas. With the exception of a lull of three days, the two following weeks saw an endless procession of wounded. The great majority of these were only slightly wounded and able to walk, with the result that the two wards set apart for these cases were exceptionally busy. The heaviest days were October 15-18, when the admissions and evacuations averaged one patient every one and a half minutes.

During this operation a large number of men in the front line suffered from diarrhea, colds, and exhaustion. At the direction of the division commander, the hospitals at Apremont were made ready to care for the sick and exhausted and, if possible, return them to duty. The men came back from the front, received food, baths, and medical attention, and in from two to seven days were again ready for service. By this means the hospitals returned to duty a large number of men who, had the usual procedure of evacuating the sick been followed, would have been lost to the division. The total number of cases of all kinds cared for by the divisional triage in this sector was 9,964. Some of these cases were from other divisions, and it is to be presumed that other triages handled cases belonging to this division.³³

THE 78TH DIVISION

On the night of October 15-16 the 78th Division relieved the 77th Division in line. The regiments went into line from east to west in numerical order, 309, 310, 311, and 312. The attack of October 16 was scheduled to be launched at 6 a. m., simultaneously with the scheduled plan of the relief of the 77th Division. The lack of time to make any reconnaissance of the line to be taken over, the ignorance and mistakes of guides, and the complete darkness of a rainy night delayed the relief of the sector of the 310th Infantry until about 11.30 a. m. on the 16th. A coordinated, simultaneous attack with the 309th

Infantry was therefore impossible, and this fact greatly hampered the success of the subsequent operations. Operations in the division sector involved the reduction of two natural strongholds: Bois des Loges and Grandpre. The former lay in the sector of the 155th Brigade and the latter in that of the 156th.³⁴

The 309th Infantry opened the attack on Bois des Loges by advancing its 2d and 3d battalions from the ridge northwest of Sommerance. The advance was made through mud, at times knee deep, across Cote 182 and the Agron River, entirely without artillery support. A halt was then made until 11.45 a. m., when, in conjunction with the 310th Infantry, which had come up on the left, a further advance was made to a line roughly on the parallel passing about 500 meters (545 yards) south of Champigneulle.^{34, 5}

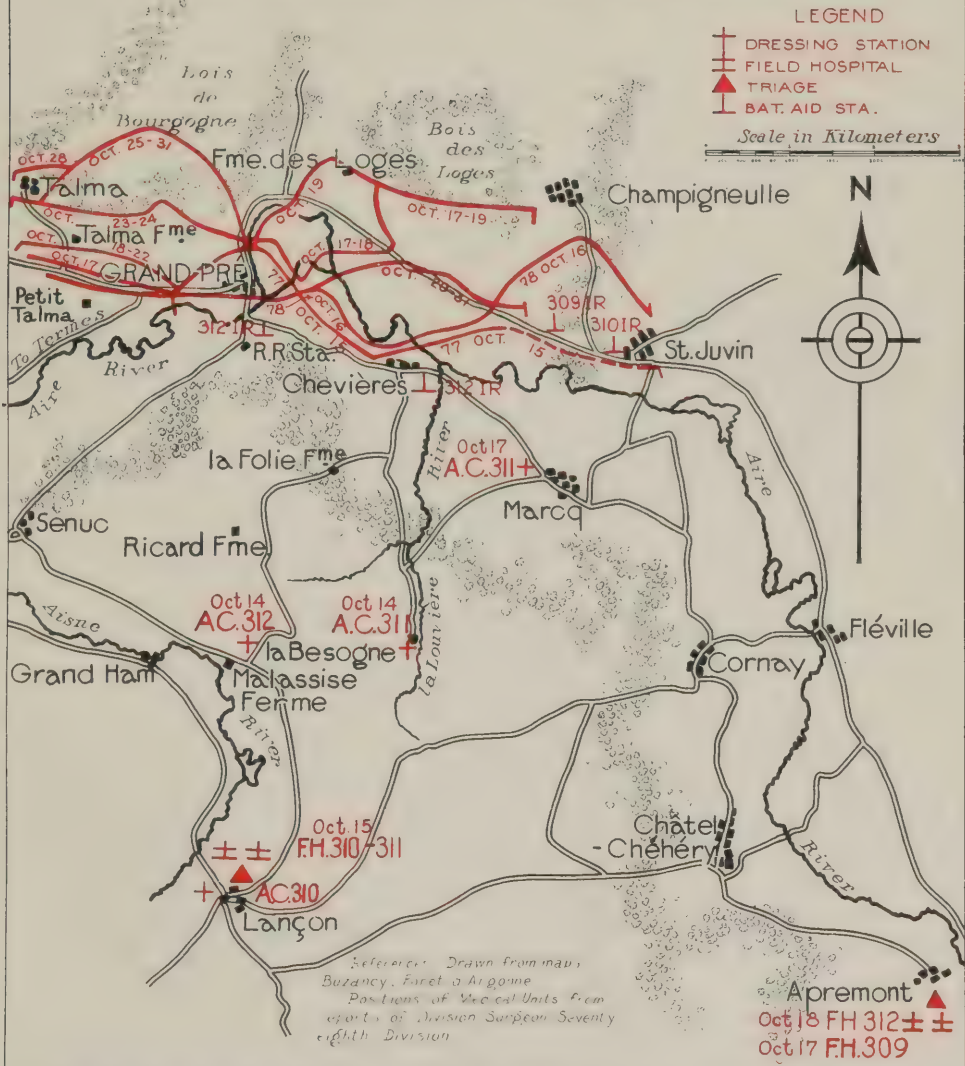
The 311th Infantry (156th Brigade) got into position in time to attack through the mist at 6.35 a. m., without any definite information as to the enemy line, his position, or the topography in front. After capturing Chevieres, the advance reached the Aire. Only two platoons succeeded in crossing the river before the mist lifted, permitting the enemy to sweep the river with artillery and with machine guns located in the woods north of St. Juvin road. This checked all further advances for the day.³⁴

On the morning of the 17th the 310th Infantry had pushed forward to a line on the parallel passing through the center of Champigneulle, on the eastern edge of the Bois des Loges, before an order reached its front line directing that it withdraw and move so as to attack Bois des Loges from the west side. The 309th Infantry advanced and took over this sector and pushed patrols forward to the third east and west road of Bois des Loges. Before night, counterattacks forced the line back in this part of the woods to the crossroads in its southern part. The 310th Infantry, meanwhile, had executed the dangerous maneuver of withdrawing from a position on the eastern side of the Bois des Loges and attacking again toward the west, across the open ground of Hill 180. By night, the 310th Infantry was entrenched on the western side of the woods, its left flank running north and south from the southwestern tip of the woods toward the woods about 2.5 km. (1.5 miles) east of Grandpre. The line held temporarily in this position until a gap which had developed between the 309th and 310th Regiments was closed. Information from corps headquarters indicated that the success of the whole military situation depended upon reaching the north edge of Bois des Loges before the morning of the 18th, and immediate resumption of the attack was ordered.³⁴

During the night of October 16-17 more troops of the 156th Brigade had been pushed across the Aire, and at 6.30 a. m., October 17, this brigade, aided by artillery fire, advanced to the line extending from about 2 km. (1.2 miles) west of Grandpre, skirting the south tip of Grandpre, northeast to the Grandpre—St. Juvin road. There the line was held up temporarily by machine guns to the north, but before the following morning its left had advanced about 0.75 of a km. (0.46 mile). On the right, liaison was also secured with the Infantry of the troops of the 155th Brigade in Bois des Loges.^{34, 5}

MEUSE-ARGONNE

2ND PHASE 78 TH DIVISION



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

At daybreak on October 18 two companies of the 310th Infantry Regiment were in position between Ferme des Loges and the westernmost tip of Bois des Loges. Here they were held up by a line of enemy machine guns on their front, were under heavy fire, and suffered severe casualties. Inside the woods two companies of the 310th had advanced to within 30 yards (27 meters) of the northern edge, and the 309th on their right had also advanced considerably. Desperate, confused fighting followed all day. The enemy counterattacks were too strong, however, and at nightfall the line in the woods was once more along the crossroads at its southern part. The companies between Ferme des Loges and the westernmost tip of Bois des Loges were still in their position, and all attempts to make a strong connection with these units were broken up by enemy fire. The left flank was more than 1 km. (0.6 mile) north of the 311th Infantry. In between, the enemy was in the Ferme des Loges. Operations planned to take place farther to the west were necessarily hampered so long as the enemy occupied his position at Ferme des Loges. Our troops between Ferme des Loges and the westernmost tip of Bois des Loges were therefore withdrawn to the southern edge of Bois des Loges.³⁴

At midnight on October 18 a heavy bombardment was opened on the citadel of Grandpre, to prepare for attack by the 156th Brigade at 2 a. m., on the 19th. This attack was ordered to advance along the tongue of land toward the edge of the woods to the west of Bellejoyeuse Ferme. There it was to be joined by the 311th Infantry attacking at 3 a. m., and to press on into the Bois de Bourgogne. The 311th was also to secure liaison with the 310th on the ridge north of Ferme des Loges. The 312th was unable to carry out its part of the program, and the 311th Regiment, after taking Ferme des Loges, was held up 300 meters (327 yards) east of Bellejoyeuse Ferme, under the shelter of a ridge. It also secured a foothold in the orchard on the ridge north of Ferme des Loges, but was unable to make connections with the 310th. The line was maintained under heavy machine-gun and artillery fire until late in the afternoon, when a hostile barrage forced that part of the line in the orchard to drop back about 200 meters (218 yards) to the shelter of the ridge.³⁴

At 3 a. m., on the 19th, an effort was made to take Bellejoyeuse Ferme. This attack was partially successful in the west, but was stopped when in the Bois des Loges. The 311th Infantry took Ferme des Loges and gained a footing in the orchard on the ridge north of it. It was also able to reach the foot of the slope on which Bellejoyeuse Ferme was located, but the troops were not able to take that place. The 319th Infantry found that the artillery concentration had not silenced the machine guns in Bois des Loges, and all attempts during the night and day of the 19th to establish liaison with the 311th Infantry failed. An enemy artillery barrage in the afternoon drove the 310th back about 200 yards (182 meters) from the orchard, between Bois des Loges and Bellejoyeuse Ferme.³⁴

Our troops in Bois des Loges were becoming exhausted, and neither the brigade nor the division had reserves available to relieve them. A request

was made to the corps for replacements to continue the attack, but this could not be granted. In consequence the line was withdrawn from Bois des Loges and was established along the Grandpre—St. Juvin road. The withdrawal was successfully accomplished by all troops before 9.30 a. m., October 20. The line now established ran along the Grandpre—St. Juvin road from Ferme des Greves to Moulin d'en Bas.³⁴

Conforming to the withdrawal of the 155th Brigade from Bois des Loges on the morning of the 20th, the line of the 311th Infantry was established from Ferme des Greves, where liaison was gained with the 310th Infantry, to the railroad cut about 1 km. (0.6 mile) a little south of east of Grandpre. Operations in the sector from Chevieres to Ferme des Greves, after this withdrawal, consisted mainly of reciprocal bombardments and patrols.³⁴

When the 2d Battalion of the 312th Infantry advanced to relieve the 77th Division units in the town of Grandpre, the enemy was found to be occupying the whole town in force, except for a half dozen houses at the western exit on the south side of Grandpre—Echaude Ferme road. It required almost two days of house-to-house fighting to complete the latter part of the capture of the town. Farther west the 1st Battalion of the 312th Regiment and a machine-gun company had forded the river in the morning under heavy machine-gun and artillery fire, seeking liaison with the French entrenched along the Grandpre—Termes road.³⁴

A pause in the operations around Grandpre followed from the 20th to the 23d, during which careful reconnaissance and study of the situation were made for the attack planned for the 23d. After a heavy destructive bombardment and a concentration of nonpersistent gas on some of the points to be attacked, a smoke screen was to be laid down and two converging attacks from Grandpre and Talma Hill were to be delivered. One assault was to follow a rolling barrage of artillery and a machine-gun barrage, and was to take the citadel of Grandpre, advance up the tongue of land to a point just west of Bellejoyeuse Ferme, along the eastern edge of the Bois de Bourgogne to a point about one-half kilometer (0.3 mile) north, thence west about one-third kilometer (0.2 mile) to a road fork. A second assault by a similar force was to follow the first at 1 km. (0.6 mile) and extend the line from the road fork southwest to the edge of the woods about seven-eighths of a kilometer (0.5 mile) distant. When this objective had been reached, a battalion of the 311th Infantry, supported by machine guns, was to advance to the north edge of Bois de Negremont and pass through the line established by the 312th. The 1st Battalion, 312th Infantry, was to attack Talma Hill and after capturing it throw out patrols through the woods toward the east.³⁴

A small group of troops scaled the wall of the citadel and reached Bellejoyeuse Ferme, but because of their insignificant numbers they could not take the place and were obliged to fall back to our lines in the northern edge of Grandpre. The attack on Talma was successful. While the full objective set for this attack was not reached, two of the three points which made up the stronghold of Grandpre were taken and the way was open for the success which followed.³⁴

An attempted surprise attack on October 24 by the troops on Talma Hill did not get started because of the enemy fire, and the day was quiet on the whole front. On the next morning, however, a battalion of the 311th Infantry attacked from the top of Talma Hill. This battalion easily gained the edge of Bois de Bourgogne and then fought its way along to a line running roughly along the objective set for the attack of October 23. The connection with the troops in Grandpre was made just before the relief of the 312th Infantry by the 311th had been completed, and by the establishment of this liaison the reduction of the stronghold of Grandpre was ended. The 155th Brigade extended its line to Ferme des Greves, and the gap from there to Grandpre was covered by strong machine-gun posts. The 312th Infantry went into the division reserve, and the 311th Infantry, supported by machine-gun units, organized the 156th Brigade front in Bois de Bourgogne, in preparation for the major operation of November 1. Further serious exploitation of the success in reducing Grandpre was not attempted, upon corps orders. Local rectification of the front, including the occupation of Talma Village, on October 28 and Bellejoyeuse Ferme on the 29th, was easily accomplished while making ready for the great attack.³⁴

MEDICAL DEPARTMENT ACTIVITIES

After the division had moved to the Argonne and before it entered the lines, 11,000 men were put through the corps baths at Rarecourt and the division baths and given clean clothing.³⁵

During the march to this area and while the division was in the corps reserve, the Medical Department maintained liaison by assigning 4 ambulances and 1 officer with 4 enlisted men from an ambulance company to each brigade.

On October 15 the sanitary units of the division were disposed of as follows: Ambulance Company No. 311 operated a dressing station at La Besogne, and Ambulance Company No. 312 another at Malassise Ferme. Ambulance Company No. 310 and United States Army Ambulance Service Section No. 569, at Lancon, established the divisional triage (Ambulance Company No. 309 had not yet arrived from base ports). Field Hospitals No. 310 and No. 311, at Lancon, were prepared to receive gassed and sick, respectively. Field Hospital No. 309 was at Apremont and Field Hospital No. 312 at Clermont. Seriously wounded were to be evacuated through the triage to Evacuation Hospital No. 11, at Brizeau Forestieres, and nontransportable wounded to Mobile Hospital No. 4, at La Grange-aux-Bois; Mobile Hospital No. 2, at Chateau Salvange; and Army Red Cross Hospital No. 114, at Fleury. The medical supply unit was located at Clermont throughout the division's activities, supplying forward units through subdepots at the triages and assisting a number of organizations which did not belong to its division.³⁶

Medical organizations of the 78th Division, after a conference between the division surgeons concerned, took over sites which had been held by the similar organizations of the 77th, but difficulty in evacuation was experienced for the following reasons: The entire corps attacked before the

Medical Department could complete a reconnaissance, and it was then found that the sector of the 78th did not exactly coincide with that of the 77th. The road conditions were extremely bad. For example, mud was over 2 feet deep in some places between La Besogne and Lancon; liaison between regiments and ambulance companies was not satisfactory, telephone communication was not fully established, and it was not until the 17th of October that the ambulance companies could locate some of the troops they served.³⁷

The direction of roads was such that the wounded on the 78th Division in the eastern half of the sector, north of the Aire River, naturally drained into St. Juvin, where several hundred of its casualties were cared for by the 82d Division during the first 36 hours. It is true this half of the sector was heavily drenched with gas by the enemy, but from the considerable number of walking gas cases it was concluded that there was a large mental element in the condition of many such patients.³⁸

On October 17 the evacuation system was radically changed; the sanitary train was split in half and two evacuation routes established, each with its dressing station or stations, triage, and two hospitals. The train was then disposed as follows: Ambulance Company No. 311 established dressing stations at La Besogne and Marcq, Ambulance Company No. 312 operated a station at Malassise Ferme. Headquarters of the train was located at Lancon, with Field Hospital No. 310 for gassed cases and Field Hospital No. 311 for sick, and there headquarters of the ambulance section and Ambulance Company No. 310, with United States Army Ambulance Service Section No. 569, operated Triage No. 1. A section of Ambulance Company No. 310 established Triage No. 2 at Apremont, where Field Hospitals No. 309 and No. 312 received gassed and sick, respectively.³⁹ The triages, augmented by whatever personnel was available, cared for surgical patients. These were not treated at any other divisional formation (though admitted to hospital wards if necessary to await transportation), but were sent direct from the triages to mobile or evacuation hospitals. After the division medical formations were located as above described, one section of the sanitary train evacuated up the valley of the Aisne through the medical establishments at Malassise Ferme and Lancon, while the other evacuated up the valley of the Aire through those located at Marcq and Apremont. The station at La Besogne was discontinued, except that 1 officer and 8 men were left there to care for casualties in the divisional reserve.³⁸

Certain changes in assignment were made during this period. On October 17 a detachment which reported with an ambulance convoy reinforced the sanitary train, and on October 19 and 20 detachments of Ambulance Company No. 309 arrived and were assigned to the triage at Apremont. On the 23d that triage was further strengthened by assignment to it of the headquarters of the ambulance section. On October 29 United States Army Ambulance Service Section No. 569 was relieved from duty with the division.⁴⁰

Liaison was maintained at first by a runner attached to each battalion aid station, but later this system was modified by assigning to each regiment in the line 1 officer and 4 men from the ambulance companies. This officer not only



FIG. 76.—Dressing station operated by Ambulance Company No. 311, 78th Division, at Marcq, Ardennes, October 17, 1918

maintained contact between the battalion and ambulance stations, but he also inspected daily each of the former which he served, to assure himself that the wounded were being evacuated promptly and that supplies were properly maintained. He submitted a daily report concerning his activities. Each medical department organization, whatever its character, made a daily report of its location to the division surgeon. The chief difficulties which the Medical Department experienced were in maintaining contact.⁴¹

The evacuation system in its relation to individual infantry regiments during the most stable periods was as follows: All battalion aid stations were



FIG. 77.—First-aid station, 312th Infantry, Grandpre, Ardennes, October 18, 1918

provided with runners from the ambulance companies, and contact was maintained by them. Under the liaison officer mentioned above, ambulances were habitually parked in the vicinity of the dressing station; but when a battalion station enjoyed ample protection because of steep hills or sunken roads, an ambulance was parked near it. There was very little transportation by bearers back of these stations, except in the vicinity of Grandpre, where the character of the roads made access to their station by motor ambulance utterly impossible.⁴² Relays of litter bearers carried patients from the station at Grandpre to a point on the road west of La Folie Ferme, accessible by horse-drawn vehicles, viz, general service wagons and British limbers.

These vehicles then carried wounded to the motor ambulance head, at the point where the road began to descend into the Aisne Valley, near Malassise Ferme. At all other places, ambulances were sent up on call, by runner, to the battalion aid station.⁴³ Later, ambulances were sent up experimentally, via Senuc, through territory occupied by the French 35th Division, to the battalion aid station at Grandpre. As they were not fired upon, a regular service was established from that point, over this route, and another was operated via Termes to Talma Ferme. At a point about 200 meters (218 yards) east of Chevieres the 312th Infantry maintained a battalion aid station, and ambulance service was established between this point and Marcq. At a point about 1 km. (0.6 mile) west of St. Juvin, on the high road between St. Juvin and Grandpre, battalion aid stations were established by the 309th and 310th Infantry Regiments, and evacuations were carried on from this point to Marcq, crossing the Aire River at St. Juvin, over bridges built by the Engineers of the 78th Division.⁴⁴

The regimental aid station of the 309th Infantry was located at Marcq and its battalion stations in St. Juvin, and about 1 km. (0.6 mile) west of that point in the shelter of a hill. In this regiment all the medical officers but one and most of the Medical Department enlisted men were gassed and evacuated. The regiment itself was so reduced in strength that line stretcher bearers could not be furnished, and the regimental band was sent to perform this duty.⁴⁴

As a routine procedure, patients were given antitetanic serum at the aid stations, but in about 10 per cent of the wounds, incurred in rear of them, it was given at the dressing station. At the triages, where all patients were examined, it was given to such as did not show evidence of its prior administration, unless they were in profound shock, when its need was noted on the diagnosis tag. Casualties which had not passed through a battalion aid station were reported daily by the dressing station to the surgeon of the battalion concerned, with appropriate data for his reports of sick and wounded. About 80 per cent of fractures were splinted at battalion stations. At the dressing stations, splints were rectified if necessary and applied to all needing that attention. At the dressing station also, splints were applied to very severe wounds of the soft parts in order to allay pain in transit over rough roads.⁴³ During this action the average time which elapsed after a patient was wounded before he was admitted to a field hospital was approximately two hours.⁴⁵

It was necessary at times to use not only ambulances but all the trucks of the sanitary train as well, and many trucks of the motor supply train, for evacuation. Regular use was made of returning ration trucks, which had to pass either the triage at Lancon or that at Apremont on their way to the rear. To obviate delay, they were marked by broad white streamers across the radiators, and thus being recognized were flagged on their return from the front. At Lancon a waiting station, subsidiary to the triage, was established on the main street down which the trucks had to pass. No figures are available of the number of wounded men evacuated by truck, but it was considerably

larger than the number evacuated by ambulance. Ambulances in the division proved entirely inadequate in number to carry out evacuation in addition to the necessary transport in front of the triage, for the distance to evacuation hospitals at this time varied from 25 to 45 km. (15 to 27 miles). Owing to road congestion and the necessity for slow travel because of the condition of the wounded, the round trip for ambulances averaged from 12 to 14 hours and for trucks 24 hours. This alone deprived the division of the normal use of its transportation, both ambulances and trucks.⁴⁶

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CHAPTER XXVI

SECOND PHASE—Continued

FIFTH CORPS

At the beginning of the second phase of the Meuse-Argonne operation, the Fifth Corps, which held the center of the attacking lines, consisted, from right to left, of the 3d and 32d Divisions. During the previous night and the forenoon of October 4, the 91st Division (less the 58th Field Artillery Brigade), had been relieved from the front line and had passed to the corps reserve in the vicinity of Bois de Very and Bois de Cheppy.¹ The 32d Division had moved over to the left, relieving the 91st, and divided the corps front with the 3d Division.² The 42d Division, in the vicinity of Recicourt, had now passed from the army reserve and was attached to the Fifth Corps as reserve.³ The corps was ordered to attack the heights on both sides of Romagne. The 3d Division was ordered to assist the left division, Third Corps, to capture the Bois de Ogons, Bois de Cunel, and the heights east of Romagne. The 32d Division was ordered to capture Gesnes and the heights west of Romagne, and to assist the 1st Division on its left in the capture of Bois de Money.⁴

On October 4, at 5.25 a. m., the attack began, the troops being preceded by a barrage at 300 meters (327 yards). During the afternoon both divisions encountered strongly organized machine-gun resistance and artillery fire. Advance elements of the 3d Division reached as far north as the Romagne—Cunel road. At 5 p. m. the 32d Division reported that their troops had passed through Gesnes. The 3d Division reported that they were attacking Romagne and that their troops were along the Romagne—Cunel road. At 7.45 p. m. the 3d Division reported its inability to get the Cierges—Romagne road because of machine-gun fire from the Bois de Gesnes. During the night the 32d Division occupied a position south of Bois de la Morine and had elements of this division entrenched along the Gesnes—Cierges road.^{2, 5}

On October 5 the attack continued at 6.30 a. m. At noon the line of the 32d Division was near the edge of Bois du Chene Sec. At the same hour the corps line ran approximately through the Bois du Chene Sec to the northern exit of Gesnes to the Bois de Cunel. At midnight the line taken was practically as follows: Hill 268, Hill 253, Gesnes, Bois du Chene Sec.^{2, 5}

No attack was ordered for the morning of October 6. Field Orders, No. 62, Fifth Corps, directed the Fifth Corps to organize for further attack and to establish the general line of resistance for defense, as follows: Nantillois—Bois de Beuge—Bois Emont—Bois Communal de Cierges—Bois Communal de Baulny.

On October 7 Field Orders, No. 64, Fifth Corps, provided for the continuance of the advance on "D" day at "H" hour. The Fifth Corps was again

ordered to attack the heights east and west of Romagne. The troops of the corps now comprised the 3d Division, 32d Division, 1st Division, 42d Division, 181st Brigade (91st Division). The elements to be in line from right to left were as follows: 3d Division, 32d Division (with 361st Infantry Regiment and 347th Machine Gun Battalion of the 91st Division attached), the 1st Division with 362d Infantry Regiment attached. The 42d Division was the corps reserve. No operations were attempted on October 7 or 9.^{5, 6}

On October 9, at 8:30 a. m., the attack was launched, the advance of the corps being made under a rolling barrage. The 3d Division encountered a short, violent counterbarrage and considerable machine-gun fire on entering Bois de Cunel; but by noon this division had passed through these woods, and its advance elements had occupied Tranchee de la Mamelles. Units were then pushing on toward the Romagne—Cunel road. At noon the 32d Division had advance units in the southern portion of Romagne, had advanced to the army objective, and was progressing through the Bois de Moncy. The 1st Division encountered considerable machine-gun resistance during the morning as far as Cote 263 in Le Petit Bois. On the left this division was in position 1 km. (0.6 mile) south of Sommerance. During the afternoon there was a general advance along the entire corps front excepting in the vicinity of Cote 255, where little progress was made. By nightfall the line from left to right was approximately as follows: From point about 0.75 km. north of Fleville the line ran northeasterly through center of Cote de Maldah, then through center of Cote 263 in Le Petit Bois, then to center of woods at Cote 255. From there the line ran due north to the army objective and along it about 1 km., turning sharply due east, skirting southern edge of Romagne, and then to a point just 400 meters (436 yards) below Cunel.^{2, 7}

On the morning of October 10 the 1st Division advanced, and by noon had established its left just north of Sommerance, its center in the vicinity of Ravin du Gras Faux, and its right just south of La Cote Dame Marie. During the afternoon little progress was made, the time being spent, however, in preparation for a vigorous offensive in the morning.^{2, 7}

On the morning of the 11th much opposition was encountered. During the night of October 11–12 the 42d Division moved into the line and took over the front occupied by the 1st Division. The 181st Infantry Brigade (91st Division) withdrew from the line and the 32d Division extended into the gap caused by its withdrawal.

On October 12 Field Orders, No. 71, Fifth Corps, changed the sector limits of the corps. It also transferred the tactical control of the 3d Division to the Third Corps, to be effective at 3 p. m. Field Orders, No. 72, Fifth Corps, moved the 89th Division (which was transferred from the Third Corps to the Fifth Corps) from the vicinity of Recicourt to the area Bois de Montfaucon—Bois de Very and Bois de Chehem. After completion of the reliefs, the morning was used in making adjustments in the line and in improving its positions, as well as in keeping contact with the enemy. At the end of the day the situation was practically unchanged. The corps front was shortened by the 3d Division's transfer to the Third Corps. The 32d Division

held the right of the corps front and the 42d Division the left, with the 89th Division in reserve.²

On October 12 Field Orders, No. 73, Fifth Army Corps, setting forth the plans for further attack, were issued. The Fifth Corps was to seize La Bergerie Ferme and Cote 253, flanking the Bois des Hazois. It was ordered to advance to the line—ridge running southwest from Hill 300 in Bois d'Andevanne—La Bergerie Ferme—Bois l'Epassé—Cote 253—ridge 1 km. (0.6 mile) northwest of St. Georges. The 32d Division was to attack on the right and the 42d Division on the left, with the 89th in reserve.

On October 14 the attack was launched at 5.30 a. m. The advance was made under a rolling barrage. Much opposition from artillery fire and machine guns was encountered at the start. By noon the line of the 42d Division was just below St. Georges and over 1 km. (0.6 mile) below Landres et St. Georges, then down in the vicinity of La Musarde Ferme. The 32d Division had passed Romagne by noon.² At night the line extended approximately along a line 1 km. (0.6 mile) south of St. Georges—Landres et St. Georges, thence southeast to Bois de Gesnes, thence northeast to Bois de Chauvignon, southeast just northwest of Romagne, thence to a point about 400 meters (436 yards) northeast of Romagne.⁷

On the morning of October 15 no pronounced advances were made. Progress was very difficult, especially in wooded areas. The 42d Division captured Hill 242 and at noon was attacking La Tuilerie Ferme. During the afternoon the attack resulted principally in minor advances. Penetrations were made into the Bois de Bantheville.²

No attack was ordered for October 16, and the divisions of the line made readjustments of their positions, in compliance with Field Orders, No. 76, Fifth Corps. In the morning troops were in La Tuilerie Ferme, and at noon the 42d Division reported the capture of La Musarde Ferme. In the afternoon Cote de Chatillon and La Tuilerie Ferme were captured. No attack was ordered for the 17th. The corps commander directed that the region in the vicinity of Cote de Chatillon, La Tuilerie Ferme, as well as the road leading to Bantheville, be cleared of the enemy and that patrols be pushed forward into the Bois de Bantheville.²

On October 17 patrols and outposts were pushed well forward. Patrols from the 32d Division found the northern and western parts of the Bois de Bantheville practically free of the enemy, and one element of this division during the morning of October 18 established itself on the La Dhuy Ferme—Bantheville road.²

During the night October 19–20 the 32d Division (less the 57th Field Artillery Brigade) was relieved by the 89th Division, after which it was assembled in the vicinity of Bois de Cheppy, Bois de Very, and the western part of the Bois de Montfaucon, where it was held as corps reserve. The 57th Field Artillery Brigade was attached to the 89th Division.³

From October 21 until the end of the month no change was made in the general situation of the corps. However, the period was used in a general preparation for the next advance. This included the clearing of the Bois de

Bantheville by the 89th Division.⁹ On October 24 a new plan of attack was laid down in Field Orders, No. 90, Fifth Corps. The ridge of the Bois de Barricourt and the heights northeast of Bayonville at Chemnery were to be carried. The troops for the attack comprised the 89th and 2d Divisions in line, 1st Division as corps reserve. Provisions were made for the 42d in reserve to pass to the First Corps. As the 42d Division was to remain in line until the attack, the 2d Division was ordered to pass through the 42d Division to the point of departure, whereupon the 42d Division was to be assembled in the vicinity of Exermont, passing to the control of the First Corps, after the new plan of attack (for November 1).

MEDICAL DEPARTMENT ACTIVITIES

On September 30, when the 32d Division relieved the 37th Division, the triage was located 1.5 km. (0.9 mile) southwest of Montfaucon. The 3d Division replaced the 79th on that same date, and its triage was located next day about 1 km. (0.6 mile) southeast of Very on the road to Avocourt; but as it proved impracticable to evacuate by roads in the eastern part of the corps sector, this route was shifted to the Very—Cheppy—Varennes road. As this change stopped evacuations from the corps to Mobile Hospital No. 1 at Les Clairs Chenes, the latter unit was transferred to the Third Corps, and Mobile Hospital No. 2, at Chateau Salvange, was assigned to the service of the Fifth Corps and the First Corps conjointly.

Having entered the Fifth Corps on the night of October 6–7 in relief of the 91st Division, the 1st Division established its triage at Cheppy. When, on October 12, the 42d Division replaced the 1st it took over the triage site of the latter at Cheppy, but later moved its triage to Baulny.¹⁰

The 89th Division established its field hospitals near the site occupied by those of its predecessor 2 km. (1.2 miles) southwest of Montfaucon, but soon moved them to a point 1.5 km. (0.9 mile) north of Charpentry. When they were shelled out of this position, on October 20, the hospitals for sick and gassed patients were moved to the south of that village and the triage was established at La Grange-aux-Bois Ferme. United States Army Ambulance Service Section No. 602 was now withdrawn from the corps.¹⁰

On October 27, the surgeon's office, Fifth Corps, moved to Cheppy. Two days later Mobile Hospital No. 4 was established 0.5 km. (0.3 mile) north of that town, and Mobile Hospital No. 6, 1 km. (0.6 mile) west of it, was made available to the Fifth and First Corps.¹¹

The following memoranda were issued by the corps surgeon during the second phase of the Meuse-Argonne operation:

Memorandum No. 19

6 OCTOBER, 1918.

To division surgeons:

1. Establishment of field hospitals (so far as practicable following plan will be followed):

(a) One field hospital for triage, shocked cases, and nontransportables. Surgical and shock teams will be organized by drawing upon the personnel of other field hospitals.

All cases, *except gassed*, will be passed through this hospital and a careful sorting made so that there will be no confusion of cases in the evacuation; severely and slightly wounded and sick to be kept separate.

(b) One field hospital for gassed. At this hospital the division medical gas officer, and an assistant will be stationed and examine and classify every case brought in. All doubtful and slightly gassed cases will be retained for a reasonable length of time with a view to the possibility of returning them to duty.

(c) One field hospital for ordinary sick. All serious cases will be evacuated, but those requiring only a few days in hospital will be retained until cured, if possible, and returned to duty. Cases of influenza will be retained and treated in a separate tent.

(d) One field hospital in reserve.

2. Field hospitals should be located in a sheltered spot where water is available, and near a good road; not at a crossroad or near an ammunition or supply dump, and not in or in the outskirts of a town which is within range of enemy guns.

3. Instructions will be given to insure the administration of antitetanic serum at the earliest possible moment. In addition to the notation on the diagnosis tag, the patient will be marked on the forehead with a "T" or a cross. In case a wounded man is received at triage without this notation or marking, a dose will be administered immediately. The man's statement that he has received a dose will not be considered. Great care will be taken to have diagnosis tag made legible and to have it securely fastened to the patient.

4. The greatest care will be exercised in the use of the tourniquet. The exact time of application will be noted on diagnosis tag and the ambulance orderly be directed to look after it during the trip.

Memorandum No. 20.

16 Oct. 18.

1. Beginning to-morrow at 8 a. m. a noncommissioned officer, Medical Department, will be stationed on the main road at Clermont at northern end of loop to direct the evacuation of wounded. He will have the necessary information as to available beds in the different mobile and evacuation hospitals.

Each driver of an ambulance or truck used for evacuation, upon departure from a field hospital, will be given a slip by the officer in charge, upon which will be stated the number and class of patients in his vehicle; e. g., "4 severely wounded," "10 slightly wounded," "4 postoperatives," "9 sick," "6 gassed," etc. Upon reaching the sergeant in Clermont, the driver will hand him this slip; the sergeant will give the necessary directions, note the destination on the slip, and file it to be turned in at this office at end of his tour of duty.

2. The greatest care will be exercised in sorting patients for evacuation; severely and slightly wounded, wounded and gassed, postoperative, and preoperative cases *will not be mixed*. All serious cases will be evacuated by ambulance whenever possible, and field hospital trucks or trucks returning empty to the rear used for slight cases when necessary.

An officer will be held strictly accountable for triage and evacuation at each field hospital functioning.

The following changes were issued by the corps surgeon, Fifth Corps, on October 25, 1918:

EVACUATION OF SICK AND WOUNDED

1. Organization:

Field hospitals for triage, gassed, and sick: 89th Division now established about 1 km. northeast of Charpentry. This site will be occupied by the field hospitals of 1st Division when the division goes in. If conditions permit, the establishment will be placed at La Grange-aux-Bois Ferme. Second Division will establish triage about 1 km.

southwest of Exermont. Field hospitals for gassed and sick and for nontransportable cases of 2d and 89th Divisions will be established on road running south from Charpentry, about $\frac{1}{2}$ km. from junction of that road with main road (Baulny—Varennnes).

2. Evacuation:

Same as in previous orders except that Mobile Hospital No. 6, about $\frac{1}{2}$ km. west of Cheppy, will be used in conjunction with 1st Corps for operable, severely wounded.

Memorandum No. 22-A was published by the corps surgeon on October 27, 1918.

1. There will be available very shortly three hospitals near front line for nontransportable operative cases:

- (a) Groupe complémentaire of the 2d Division, 1 km. south of Charpentry;
- (b) Mobile Hospital No. 4, $\frac{1}{2}$ km. north of Cheppy (to be established October 29), and
- (c) Mobile Hospital No. 6, 1 km. west of Cheppy (to be used in conjunction with the First Corps in case of need).

Therefore, no surgery will be performed in advanced field hospitals except the absolutely necessary emergencies, but special attention will be given to the treatment of shock, especially at the triage, in order to prepare these cases for transportation and subsequent operations.

All transportable cases which will evidently stand the two or three hour trip to the rear will be sent to Mobile Hospital No. 2, Evacuation Hospital No. 10, or A. R. C. Hospital No. 114, in order to avoid clogging the forward surgical centers.

Great care will be exercised in sorting cases at the triage, only one class of cases being loaded into a vehicle, in order to expedite evacuation and return of the vehicles and prevent the necessity of further sorting.

2. The divisional gas officer and an assistant will be stationed at the division gas hospital, and every case entering will be carefully examined. All cases of a suspicious nature, very slightly gassed or exhausted, will be held for at least twenty-four hours and returned to duty if possible.

A supply of clothing will be kept at gas hospitals for those returned to duty.

3. All cases of slight illness and of influenza will be held at divisional sick hospitals for a reasonable length of time with a view of returning them direct to duty whenever possible.

THE 3D DIVISION

On October 4, at 5.25 a. m., the 3d Division launched its attack, with the 5th Infantry Brigade in advance. Its point of departure was approximately the Mantillois—Cierges road.¹²

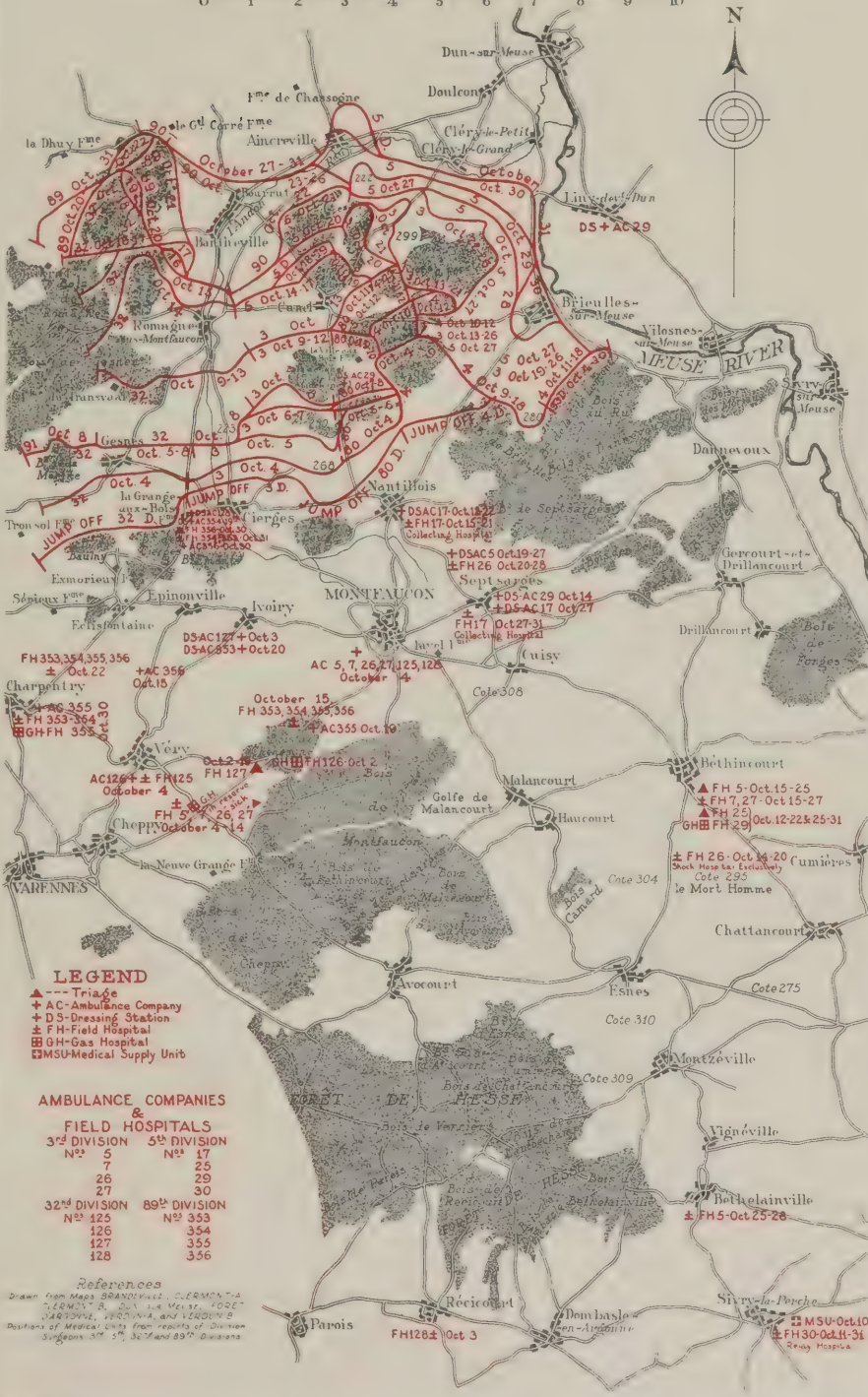
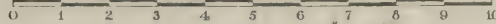
Its prescribed zone of action was, on the east, Nantillois—Cunel road (exclusive)—Cunel (exclusive)—Bantheville (inclusive)—Andevanne (exclusive)—Tailly (inclusive); and on the west, Cierges (inclusive)—Bois de Gesnes (east edge)—Bois de Bantheville (southwest edge). Its action was to assist the left division of the Third Corps to capture Bois des Ogons, Bois de Cunel, and the heights to the east of Romagne.¹³

The 5th Brigade comprised the 4th Regiment of Infantry on the right and the 7th Infantry on the left. Because of the strongly organized machine-gun and artillery resistance, the division line was advanced less than a kilometer.

On the morning of October 5, at 6.30 a. m., the attack was continued. By infiltration, the line was advanced slowly against stubborn resistance from many enemy machine guns in the Bois de Baloup, to the north edge of Woods

MEUSE - ARGONNE OPERATION
SECOND PHASE
3RD - 5TH - 32ND & 89TH DIVISIONS

Scale in Kilometers



LEGEND

- + AC-Ambulance Company
- + DS-Dressing Station
- ± FH-Field Hospital
- ⊞ GH-Gas Hospital
- ⊞ MSU-Medical Supply Unit

AMBULANCE COMPANIES

FIELD HOSPITAL

3 rd DIVISION	5 th DIVISION
N ^{os} 5	N ^{os} 17
7	25
26	29
27	30
32 nd DIVISION	89 th DIVISION
N ^{os} 125	N ^{os} 353
126	354
127	355
128	356

References

Drawn from Maps BRADYVILLE, CLEMONTIA,
CLEMONT B., DUN S. & MEIST, FOREST
PARTONE, VERONA, and VERDUN B.
Positions of Medical Units from reports of Divisions
Surgeons 3^d, 5th, 32nd and 89th Divisions.

Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

250 and the western edge of Bois des Ogons. During the night of October 5-6 the 4th and 7th Infantries advanced their lines to Hill 253 and organized outpost positions on Hill 253.¹²

On October 9, at 8.30 a. m., the 3d Division attacked, with the 6th Brigade in the front line. Its mission now was to capture the heights east and west of Romagne by noon. Tranchee de la Mamelles was gained, and the advance continued. The front line of the division advanced slowly throughout the afternoon, the front line at nightfall being approximately as follows: From just north of Tranchee de la Mamelles, at a point about 1 km. (0.6 mile) south-east of Romagne, northeastwardly to the Cunel—Nantillois road.^{12, 7}

On the morning of October 10, at 7 a. m., the division continued its attack, its mission being to capture Bantheville and the heights east and west of that town. The advance developed slowly, being retarded by enemy concentrated machine-gun fire. On October 11 the attack continued, under the same general conditions as on the previous day. No material advance was made but the division line was improved.¹²

The 12th of October was spent in reorganizing units and positions, preparatory to continuing the advance upon receipt of orders. The 3d Division was transferred from the Fifth Corps to the Third Corps, and on the night of October 12-13, during a heavy rain and a thick fog, while the enemy was actively shelling the front line, relief of the 5th Division, on the right, was effected.¹²

MEDICAL DEPARTMENT ACTIVITIES

SANITARY TRAIN

The sanitary train had been parked at Bethelainville, September 27, whence the ambulance section moved, on October 1, to Montfaucon. Train headquarters with the field hospital section moved October 5 to a point 1 km. (0.6 mile) southeast of Very. While there it was subjected to shell fire, but no casualties occurred.¹⁴

Headquarters of the ambulance company section remained at Montfaucon until the division was withdrawn, and here Ambulance Company No. 7 was stationed from October 4 to 31. It operated a dressing station at this point until October 15, which it turned over to Ambulance Company No. 27 after treating 4,426 sick and wounded and suffering 18 casualties, with 2 deaths.¹⁵ Ambulance Company No. 5, after evacuating a few patients to Souilly, in the interval October 1 to 4, was also located at Montfaucon, evacuating patients immediately in rear of the lines to the dressing station, and thence to the field hospitals.

Ambulance Company No. 27 moved to Montfaucon on October 4 and was engaged until the 14th in evacuating patients from the front to the several division hospitals. During this period it also maintained relief shifts in the dressing station operated by Ambulance Company No. 7.

Ambulance Company No. 26, after moving to Malancourt, on October 1, and thence, on October 4, to the northern edge of Montfaucon, withdrew

on the 7th to a point immediately south of that ruined village and there camped until October 31. During this action its duties were somewhat varied. From the 4th to the 7th it operated a dressing station at its first position, near Montfaucon.¹⁶

Headquarters of the field hospital section remained at Very from October 4 to 14, when, on the transfer of the 3d Division to the Third Corps, it moved to Bethincourt.¹⁷ At Very, Field Hospital No. 5 functioned as a gas hospital and received 913 patients before moving to Bethincourt, on the 14th.¹⁷



FIG. 78.—Collecting point for wounded, 3d Division, near Nantillois, Meuse, October 12, 1918

Field Hospital No. 7 was in reserve at Very until October 14, when it took over the triage from Field Hospital No. 27 and, after evacuating all its patients, moved the same day to Bethincourt.¹⁷

Field Hospital No. 26 received the sick, neurological, and shock cases (582 in number) at Very from October 4 to 14, establishing an operating room in connection with the shock ward and performing all necessary surgical work. Though frequently under shell fire, it suffered no casualties here.¹⁶

Field Hospital No. 27 conducted the triage, except for gassed cases, at Very from October 4 to 14, receiving 3,601 patients, with 10 deaths. The location was very satisfactory, but evacuation to the rear sometimes proved difficult.¹⁹



FIG. 79.—Field Hospital No. 7, 3d Division, at Bethincourt, October 22, 1918

The hospital site at Very was exceptionally satisfactory, for not only was it a desirable location in itself but it was also on good roads to front and rear and it was only about 8 km. (4.9 miles) behind the lines. The concentration here of field hospitals and the medical supply unit facilitated prompt distribution of patients and supplies and proved as advantageous as did the concentration of ambulance companies at Montfaucon. This arrangement was the most satisfactory one effected by the sanitary train in the entire course of its activities.²⁰

During the period October 5 to 12, divisional casualties received at the field hospitals were as follows:²⁰ Wounded, 1,957; psychoneurotic, 124; gassed, 495; injured, 45; sick, 310; total, 2,941. These figures do not include patients admitted from other divisions.²¹

THE 32D DIVISION ^a

In compliance with Field Orders, No. 55, Fifth Corps, the corps front, during the night of October 3-4, was readjusted, the 3d and 32d Divisions taking over the sectors formerly occupied by the 3d, 32d, and 91st. Under this order the readjustment placed the 3d Division on the right of the 32d, and the 1st Division on its left. The 64th Brigade of the 32d Division moved forward and took over the sector held by the 91st Division. The 32d Division was then disposed with brigades abreast. The division line was thus extended considerably to the left, giving it a wider sector, about 5 km. (3 miles).²²

On October 4, at 5.30 a. m., the division launched its advance. Its mission was to capture Gesnes and the heights west of Romagne, as well as to assist the 1st Division in the capture of Bois de Money, and, in turn, it was to be assisted by the 1st Division in the capture of the heights west of Romagne. At 9.55 a. m. the 64th Brigade reported that its right battalion had crossed the Ruisseau de Gesnes and was attempting to outflank the Bois de la Morine. At this time the right of the line was between Hill 239 and Hill 240. At 5 p. m. the 63d Brigade reported that it held the northern edge of Gesnes. During the day the division realized approximately 1 km. (0.6 mile) advance. The line at the end of the day extended in a generally northeast-southwest direction from the Romagne—Charpentry wood about 1.5 km. (0.9 mile) southeast of Gesnes; thence south of Gesnes; thence along the ravine extending southwest through Gesnes to the small road just north of Tronsol Ferme.^{22, 7}

On October 5, at 6.30 a. m., the attack was continued. The 64th Brigade, in liaison with the 2d Brigade of the 1st Division, was given as objectives Bois de la Morine and Bois du Chene Sec. The 63d Brigade was to attack Hill 255, 1 km. (0.6 mile) northwest of Gesnes, and to work forward in liaison with troops on its right, with a view to the capture of Hill 240 and the trench system to the north of that hill. At 1.30 p. m. the division line was at or on the north edge of the Bois du Chene Sec. At that time Hill 255 was still in the enemy's lines. At the end of the day the line ran from east to west, just

^a For map of activities of this division for this period, see Plate XL.

north of Gesnes, from a point on the Romagne—Charpentry road to the northern outskirts of Bois du Chene Sec, thence southwest to the south edge of Bois de Money.^{22, 7}

No advance was made on October 6, 7, or 8. During the night October 7-8 the 63d Infantry Brigade was so disposed as to occupy the front and western edge of Bois de Beuge to Hill 255, exclusive, one of its regiments relieving the regiment of the 3d Division on the right. The 361st Infantry of the 91st Division was attached temporarily to the 32d Division and relieved the 64th Infantry Brigade on the front from Hill 255, inclusive, to the western boundary of the divisional sector. The 64th Brigade, thus relieved, took position as divisional reserve in rear of the 63d Brigade.^{22, 6}

On October 9, at 8.30 a. m., the attack was launched with the 63d Brigade in advance, followed by the 64th Brigade in support. The mission of the division was to capture the Bois de Veloup, Tranchee de Dantrise, and a portion of Tranchee de la Mamelle within its sector, seize and hold the heights north of Romagne, and capture the heights west of Romagne by envelopment from east and southeast. At the end of the day the line followed the Kriemhilde Stellung, running just to the south of Tranchee de la Mamelle, through the Bois de Veloup, northwest to about 300 meters (275 yards) southwest of La Cote Dame Marie.^{22, 7}

No attack was made on October 10, but on the morning of October 11, at 7 a. m., the division attacked, the troops closely following the artillery barrage. By 11.30 a. m. the left had advanced about 0.5 km. (0.3 mile), but the right had been unable to make any advance.²²

During the night of October 11-12 the 127th Infantry Regiment relieved the 181st Infantry Brigade (91st Division), taking over the sector occupied by it.²²

On October 14 the attack was launched at 5.30 a. m. During the morning there were hard fighting and severe losses, but there was continual progress. The left of the division was held up for some time. At 10.25 a. m. the leading battalion of the left regiment was held up on the south slope of Hill 286. At 10.45 a. m. the commanding general, 64th Brigade, reported trouble at La Cote Dame Marie and that his right flank was held up just south of Romagne by very heavy machine-gun fire. At 11.45 a. m. a battalion of the 128th Infantry was reported north of Romagne. At 2.45 p. m. the 127th Infantry was passing on both sides of La Cote Dame Marie. At 5 p. m. the 128th Infantry was in the Bois de Chauvignon. At 8.24 p. m. the division commander reported to the corps commander that the line in the left half of the division's right subsector extended across the sector about 1 km. (0.6 mile) north of the center of Romagne. At dark the regiment in the left half of the left subsector was pressing two battalions forward to get in touch with leading elements in the left half of the right subsector and to connect with the front line of the division on the left.²²

On the night of October 14, orders were issued for the continuance of the attack on the 15th, with instructions to advance to objectives not gained on the 14th, and upon the arrival at the fourth objective to exploit vigorously to the

line Arbre de Remonville—Malmay—Cote 258. During the day of October 15, the division advanced and passed the third objective and held all of the Bois de Chauvignon except a little corner of the woods on the east.²²

On the 16th the regiment on the left (127th) moved up on the western edge of the Bois de Bantheville and established its lines about 0.75 km. (0.4 mile) in advance of that held previously. On the right the division took the small remaining stretch of the Bois de Chauvignon. The 128th Infantry occupied this. For the remainder of that day and on the 17th, a line of resistance was organized along the general line Tranchee de la Mamelles—Tranchee de la Dantrise—La Cote Dame Marie.²²

On the night of October 19–20, the 32d Division was relieved from the front line by the 89th Division. The relief was completed at 7.55 a. m., October 20. The division then moved into the area of Bois de Cheppy, Bois de Very, and western part of Bois de Montfaucon, where it was held as corps reserve.²²

MEDICAL DEPARTMENT ACTIVITIES

Whenever it was possible to do so, provision was made at regimental and battalion aid stations for giving hot drinks, food, and rest, and many sick and exhausted men were returned from these stations directly to the line.²³

AMBULANCE COMPANIES

Ambulance Company No. 125 established a dressing station at Montfaucon; Ambulance Company No. 126 established one at Very, and Ambulance Company No. 127 one at Ivoiry, while Ambulance Company No. 128 established a station for the slightly wounded at a crossroads near the command post. Later another station was established by the same personnel of Ambulance Company No. 128, near the crossing of the Cheppy—Autrecourt roads. A dressing station was established subsequently at La Grange-aux-Bois Ferme, with ambulance posts at Cierges, Gesnes, and at other points as the action developed.²⁴

FIELD HOSPITALS

Field Hospital No. 126, for the reception of gassed and sick patients, and Field Hospital No. 127, to act as triage and to receive the nontransportable wounded, had been established at the southern edge of Bois de Chehem on October 1. On October 4, Field Hospital No. 125 was ordered to establish in the vicinity of Very, where it received the sick and some of the walking wounded, as the lateral shift of the divisional front diverted some of the wounded through Very.²⁵ Field Hospital No. 128 cared for the sick at first at Recicourt and later at Sivry-la-Perche. Except for the change in the site of Field Hospital No. 128, these hospitals retained these locations as long as the 32d Division remained in the sector.²³ Field Hospitals No. 126 and No. 127 were thus in close proximity throughout the action, and equipment and personnel of all four hospitals were used interchangeably as conditions required. On account of the badly damaged state of the roads and in order that patients might be given hospital care as promptly as possible, field hospitals were lo-

cated farther forward than usual—for several days in advance of the Light Artillery—with the result that a number of casualties occurred in the hospital personnel. The triage plan previously developed was continued, proving satisfactory in its results and smooth in its operations, for at the end of each period it gave prompt data concerning numbers and names of casualties.²⁵ The commanding officer of Field Hospital No. 127, which conducted this triage, reported in part as follows:²⁶

Throughout our stay at Montfaucon we were shelled day and night, for we were situated very close to our own 155s and were exposed to such fire as was intended for American batteries. The triage was in an even more exposed position, and here, too, we found ourselves the target for shells. * * *



FIG. 80.—Medical Supply Depot, 32d Division, near Montfaucon, October 22, 1918. Field Hospital No. 126 in background

Cases remained in hospital an average of three days. In the triage patients were kept only long enough to be given a thorough examination, to have splints and dressings adjusted or changed, and were then either evacuated to Field Hospital No. 127 or to the rear. Whenever the condition of patients warranted, hot drinks and food were given. Three medical officers were stationed at the triage for the sole purpose of adjusting dressings and splints. The hospital had a capacity of about 300 and the triage about 400. (The hospital and the triage were situated about 1 km. (0.6 mile) apart.)

Ample medical matériel was available at all times.

In addition to 4,193 casualties in the 32d Division from September 22 to October 19, 2,589 casualties of other American units, 107 French, and 50 Ger-

mans were cared for by the Medical Department of the division, making a total of 6,939. Of 32d Division casualties, 235 were cared for by other organizations. Casualties in the 32d Division as reported at the triage were as follows:²³

	Officers	Men
Severely wounded.....	15	628
Slightly wounded.....	48	2,110
Neuroses.....	4	26
Gassed cases.....	17	515
Injured.....		61
Sick.....	40	964
	124	4,304

The division surgeon interpreted these and other figures as indicating that medical officers were showing a keener discrimination than formerly when called upon to determine whether a case should be evacuated. As a matter of fact, very few were sent to the field hospitals who should have been returned to duty at the front. A considerable number, however, were sent to the rear from the field hospitals who could have been retained with the troops if there had been adequate provision for giving them rest, food, and reequipment.

Of 301 nontransportable cases admitted to the advanced surgical hospital, 176 were evacuated to the rear after operation or treatment, 125 died, 79 of these being in profound shock when admitted, and dying without surgical intervention. Forty-six patients died during or following operation. In addition, 13 were dead on arrival at hospital.²⁷

Because of the insistence of surgical consultants, the amount of surgical work performed in field hospitals was greatly diminished. Some patients who had been evacuated from them without operation were either dead or moribund on their arrival at army hospitals.²⁵

The percentage of wounds due to shell fire was very high in this operation.²⁵

A peculiar feature of this action was the narrow division front and the lateral shifting of divisions, resulting in many wounded getting out of their proper evacuation lines. This resulted in the admission to the field hospitals of each division of a number of patients belonging to some other division or divisions. Complaint was made that men from the 32d Division were going to other hospitals, but triage reports showed that the division had cared for twice as many men from other divisions as its wounded numbered who sought aid elsewhere. Most of the wounded from other divisions seeking treatment in field hospitals of the 32d Division came from the 3d, 5th, and 89th Divisions. This interchange of patients was unavoidable, especially after a sector was shifted. The whole terrain was exposed to long-range artillery fire, and the walking wounded naturally crept back by the safest route. These were tortuous, diagonal valleys, and in a strange country, with no map for his guidance, a wounded man was apt to lose his way. Then,

where, as was the case to a certain extent, the country was open, men left the roads patrolled by military police and thus missed the advantage of their directions. A number of men reaching hospitals were stragglers from the front. These were soon collected by the military police and taken back to their companies.²⁵

Front-line evacuation was performed by litter bearers of the regimental medical detachments, by bearers detailed from ambulance companies as required, and by litter bearers assigned to such duty by the commanding officers of line organizations. Wounded men were carried on litters to battalion, regimental, and ambulance dressing stations, but in many instances and wherever it was possible ambulances went forward to aid stations near the lines. The wounded were transported to the field hospitals in divisional ambulances and were evacuated from field hospitals to rear hospitals designated in corps orders by an evacuation ambulance company furnished by the corps, supplemented as necessity required by ambulances of the division, by trucks of the sanitary train, and by trucks furnished by the Quartermaster Department.²³

Evacuation from the front was usually prompt and satisfactory. In some instances evacuation from field hospitals to the evacuation hospitals designated in corps orders was delayed by traffic conditions at the rear and at times by the lack of sufficient ambulances; but no unusual or extraordinary delay occurred, and evacuation was generally satisfactory all along the line. The sanitary train met the demands made upon it, and only one ambulance belonging to it was out of commission for more than a brief period.²³

THE 91ST DIVISION (181ST INFANTRY BRIGADE)^b

On October 7 the 181st Infantry Brigade (91st Division) was assigned to the Fifth Corps, and was engaged in the attack until October 12.^c The two regiments of the brigade were assigned to the 1st and 32d Divisions. On the 8th the entire brigade was assigned to the 1st Division. On October 10 the brigade passed from the control of the 1st Division to that of the 32d Division, and on the following day its place in the front line was taken by elements of the 32d Division. Its activities during the period, October 7 to 12, are considered in connection with those of the 1st Division. When the brigade was withdrawn it rejoined the 91st Division, now in the Belgian group of armies in Flanders.^c

MEDICAL DEPARTMENT ACTIVITIES

Casualties from the 181st Brigade were cared for in the Medical Department formations of the 1st Division. Their evacuation thence was facilitated by United States Army Ambulance Service Section No. 593, which joined the 1st Division at this time and served with it until the 181st Brigade was withdrawn.²⁸

^b For map of activities of this brigade for this period, see Plate XXXVII.

THE 1ST DIVISION^c

On October 7 the 1st Division, with the 362d Infantry Regiment (91st Division), was temporarily attached to the Fifth Corps.³¹

On October 8 the entire 181st Brigade, 91st Division, was attached. On October 9 the 1st Division, with the 181st Infantry Brigade, was directed to strongly cover its front north of Hill 240 and to attack in the direction of Hill 263 and Le Petit Bois, and to assist the 32d Division (which had previously relieved the 91st Division) in clearing Le Petit Bois and Bois de la Romagne, north of Hill 263. This necessitated an extension of the front and a reinforcement of the front-line units from the divisional reserves. Because of the extension of the front, the attack was made in three operations, thus permitting a barrage of sufficient intensity for each operation. Despite stubborn resistance on the part of the enemy, at the end of the day (October 9) the line reached was generally as follows: From just southwest of Fleville, northeasterly through the center of Cote de Maldah to Sommerance—Romagne-sous-Montfaucon road, thence to just east of Cote 263, in Le Petit Bois, thence southeastwardly to Cote 269 in the Bois de Moncy.^{6, 29, 7}

On October 10 the division proceeded to exploit its successes to the line Sommerance—Tuilerie Ferme.²⁹

On October 11 very little advance was made, and no concerted attack was ordered because of the exhaustion and depletion in the number of the troops. On this date the 1st Division (less its artillery) was ordered relieved by the 42d Division, to be effected on the night of October 11–12. After remaining for two days under First Corps orders in the Argonne, east of Rarecourt, the division moved to the Vavincourt area, near Bar-le-Duc.²⁹

MEDICAL DEPARTMENT ACTIVITIES

The sanitary train and Medical Department personnel with troops, functioned as described in the First Corps, with the following exceptions: Ambulance Company No. 13 established and operated an advance collecting and dressing station at Exermont. Field Hospitals No. 2 and No. 13 moved to Very on October 7 and remained in reserve, ready to push forward as the line advanced, relieving Field Hospitals No. 3 and No. 12, at Cheppy. Until the division was relieved, however, the advance was not sufficient to justify moving the triage or surgical hospital farther forward, and during the remainder of the operation Field Hospitals No. 2 and No. 13 remained inactive. Some of their personnel were distributed to other units to reinforce them as needed, but remained subject to recall to establish, if required, the hospitals to which they properly belonged.³⁰

The area was in a highly insanitary condition, and though very determined efforts were made to remedy this with the few men available for the work and under the exigencies of war, it was impossible to do more than to try to enforce such sanitary regulations as were deemed essential and at the

^c For map of activities of this division for this period, see Plate XXXVII.

same time possible. In nearly all parts of the area many dead bodies of men and animals were found, especially nearest to points of departure.³¹

A battalion of Pioneer Infantry was turned over to the division to help bury the dead, under direction of the division sanitary inspector, but as it had insufficient equipment was very much handicapped. Regular burial details of the division, in charge of chaplains, worked incessantly and as close to the front line as possible, often under heavy shell fire; but when the division left the area there was still an immense amount of work to be done to put it into proper sanitary condition.³¹

In the effort to provide sufficient drinking water for troops the army engineers established several chlorinating plants in the area. One of these was installed at a spring between Charpentry and Baulny, the reservoir consisting of a trench lined with tarpaulins. Water carts and water-carrying squads with canteens carried drinking water from these sources and distributed it to the men. On the third day of action a shell exploded close to the plant in front of Charpentry, cutting the supply pipe and doing so much damage that the plant was put out of commission for several days. Whenever a reasonably protected spot could be found accessible to water carts, Lyster bags were kept filled with chlorinated water, and at night canteen-carrying squads from the attacking line came back to these points to replenish the supply of drinking water for the troops. Locations of these chlorinated water supplies were indicated by signs at the places themselves and by other signs along roads leading to them. Because of the impossibility, notwithstanding these expedients, to supply an adequate amount of chlorinated water, many of the men filled their canteens or drank from any water source they could find, even from the shallow streams flowing in ravines and often containing dead bodies. The result of drinking bad water was manifest in the prevalence of diarrhea and other digestive disturbances after the division was relieved.³²

THE 42D DIVISION ^d

On October 4, 1918 the 42d Division, assembled in the vicinity of Recicourt, was assigned to the Fifth Corps. On October 5, orders were issued by the Fifth Corps for the division (less the 67th Field Artillery Brigade and the 117th Ammunition Train) to proceed to Bois de Montfaucon. This was executed on October 5. The following day, October 6, the 67th Field Artillery Brigade moved to an area between Avocourt and Montfaucon. Upon arrival in this area, this brigade was immediately attached to the 32d Division, then in line. On October 9, the division moved to Bois Communal de Cierges and Bois Emont. On October 11, under instructions of the Fifth Corps, the 42d Division relieved the 1st Division, which was holding a position in the line generally as follows: From just north of Sommerance eastward to the Bois de Romagne, thence along the northern edge of the Bois de Romagne to a point just south of the Sommerance—Romagne road. The 67th Field Artillery was relieved from duty with the 32d Division, taking up positions in support of the 42d Division on the night of October 11.^{33, 7}

^d For map of activities of this division for this period, see Plate XXXVII.

At the time when the 42d Division went into line, the enemy was holding strongly on the front of the Fifth Corps. Facing the 42d Division here was maintained a most stubborn resistance in the northern part of the Bois de Romagne, on Hill 288, Hill 242, on Cote de Chatillon, and along the line Landres-et-St. Georges—St. Georges, this being in general part of the *Kriemhilde Stellung*.³³

On October 14 the 42d Division moved forward to the attack. The 84th Brigade on the right met stubborn resistance, almost immediately. The progress of the 83d Brigade on the right was met by light machine-gun fire until the troops of this brigade arrived within about 500 meters (545 yards) of the wire south of St. Georges—Landres-et-St. Georges. Here the brigade encountered very severe machine-gun fire from the front and from both flanks. Patrols penetrated the wire south of Landres-et-St. Georges and St. Georges, but were driven back by machine-gun fire.³³

On October 15 at 7.30 a. m., the division again attacked; the 83d Brigade advancing to the corps objective, the 84th Brigade being engaged in exploiting Cote de Chatillon and the woods near La Tuilerie Ferme. In this operation the 83d Brigade, after advancing about 200 meters (218 yards), was again held up by severe frontal and enfilading fire. The 84th Brigade was progressing in its mission and by nightfall had taken Hill 288, Hill 242, and had one patrol in La Tuilerie Ferme. At the end of the day the front was, in general, along a line about 100 meters (109 yards) south of the wire in front of St. Georges and Landres-et-St. Georges, thence southeast to a point 100 meters (109 yards) south and east of La Musarde Ferme, thence east to La Tuilerie Ferme.³³

On October 16, the exploitation of Cote de Chatillon continued. The division was held in readiness to move its left forward, in conformity with the movement of the First Corps, then attacking, but as the right of the First Corps did not progress the movement was not made. The clearing of Cote de Chatillon of the enemy was continued, and on the night of October 16 the division fronted along the line about 100 meters (109 yards) south of the wire in front of St. Georges and Langres-et-St. Georges, and thence along the north edge of Cote de Chatillon.³³

From October 16 until October 30, the division was employed in organizing the front for defense and with continual pushing forward of strong patrols to develop the enemy organization.³³

On October 30, support and reserve battalions were relieved by elements of the 2d Division. The two infantry battalions holding the line and both the brigade and divisional machine-gun battalions were held in the line. The 67th Field Artillery Brigade was attached to the 2d Division for the coming attack.³³

MEDICAL DEPARTMENT ACTIVITIES

In its march to its sector in the Meuse-Argonne area, mule-drawn ambulances were distributed in the column in the proportion of two to each regiment of Infantry and one to each regiment of Artillery and of Engineers.

These ambulances evacuated patients to points whence they could be moved by motor ambulance. This arrangement proved very satisfactory, both during the march of the division to this area and during its advance to the front line. Another innovation at this time was the assignment of each ambulance company to the evacuation service of the Infantry regiment having the corresponding number and the detail from each ambulance company of an officer and sergeant, to maintain contact between the regimental and ambulance company services. This personnel remained constantly with the regimental surgeon concerned when the organization to which he belonged was in action. Similarly, an officer from the sanitary train performed liaison service for the evacuation of the three regiments of Artillery, to whom the animal-drawn ambulances were assigned as needed. This arrangement proved satisfactory, especially in so far as the Infantry was concerned.³⁴

Individual aid stations during the operation had very different facilities and shelter. A few fortunate enough to occupy partially ruined houses with splinter-proof cellars were able to function normally, others were in wooden shacks in woods or against hillsides, and a number had not even this shelter, but were forced to carry on in the open or in shell holes.³⁵ In some regiments the aid stations of the advance, support, and reserve battalions were either with or in close proximity to the battalion post controls, thus in perfect contact with the line troops served. The regimental aid station was near that of the reserve battalion and had telephone connection with the three battalion stations, as well as with the regimental post command, with its ambulance company in the rear. With the regimental surgeon were the liaison officer and sergeant from the ambulance company designated to evacuate casualties of the particular regiment. If there was reasonable protection two motor ambulances were held at the regimental aid station. This arrangement had the advantage of not unduly exposing these vehicles and at the same time of keeping the regimental surgeon in close touch with Medical Department formations in both front and rear. As on former occasions, an enlisted man was detailed to render first aid with each company in the front line, but as the physical hardships were very severe there, he was replaced whenever possible after 24 or 48 hours' service.³⁶

Four bearers (or sometimes eight, when relay or relief was necessary) struggled back over shell-torn, muddy paths to the animal-drawn ambulances, which were taxed to their utmost.³⁷ The absence of roads that motor vehicles could use in the right half of the divisional sector made evacuation here especially difficult, for carries by bearers or by animal-drawn ambulances, or by both, over rough, hilly roads, knee deep in mud were necessary before motor vehicles could be reached. The roads north and east out of Exermont were impassable to motor vehicles, and until the road running east from Sommerance had been cleared and rendered reasonably safe, the front of the 84th Brigade was from 6 to 10 km. (3.7-6 miles) from motor ambulance heads. It was under these circumstances that the animal-drawn vehicles proved indispensable, for they bridged much of the gap between the battalion aid stations and Exermont, where patients could be transferred to motor vehicles.³⁸

As the division moved into the line a dressing station was opened at Apremont on the main road to Cheppy, while the three other dressing stations were located at Baulny. Coincidentally with the infantry advance, motor ambulance heads were located at Fleville and at the crossroads east of that town. At the latter point, aid stations of the 165th and 166th Infantry Regiments were established, and within a short time there was a considerable accumulation of wounded here who were subjected to intermittent shell fire. So, an emergency-collecting station was opened at Fleville, and three ambulances were assigned to the task of evacuating sitting cases from the crossroads to this station, whence they were sent by trucks to the rear. At no time was there any delay in the evacuation of litter cases. Late in the afternoon of October 14, ambulances were able to gain entrance to Sommerance, whither an aid station of the 166th Infantry had moved in the meantime.³⁸

On the right the use of animal-drawn ambulances as previously planned was adequate to meet the demands of the situation, though even these vehicles were unable to advance more than 3 km. (1.8 miles) beyond Exermont, thus necessitating a litter carry of from 4 to 6 km. (2.4-3.7 miles) from the front line to any kind of wheeled transportation. In addition to the long portage, litter carriers were hindered by the hilly character of the country and by deep mud, but by 9 o'clock on the night of October 15th the field had been cleared and 1,211 cases had been evacuated to the rear.³⁹

After the division ceased its attacks, casualties were few and were cared for readily.

FIELD HOSPITALS

Two field hospitals were established at Cheppy and two at Baulny, where, in conjunction with them, a triage was manned and operated by ambulance company personnel. One of these hospitals received gas cases only, while the second, in connection with the triage, established a shock ward for non-transportable cases, and fed, sheltered, and treated the slightly wounded. All severely wounded who could endure the trip were evacuated to the rear.⁴⁰ Although Baulny was subject to shelling and bombing, the hospitals continued to operate there, because of their convenient proximity to the front. As casualties decreased in number, the hospitals at Cheppy were closed and moved to Baulny, where they were held in reserve. Evacuation in rear of the field hospitals was effected by an evacuation ambulance company and by a number of French ambulances, which transported large numbers so readily that the proper service of the divisional ambulances which was, of course, in front of these hospitals, was not interrupted. A total of 2,394 cases passed through the field hospitals during this period.⁴¹

From October 8 to the signing of the armistice the 42d division was in the Argonne front, and casualties from gas were high, due in part to the wooded nature of the country. Of 1,129 patients received at the advance dressing station, 481 were returned to duty from the divisional gas hospital after from one to five days' observation and treatment.⁴²

THE 89TH DIVISION *

Upon its relief in the Lucey sector by the 37th Division, on October 8, the 89th Division proceeded to the Recicourt area, where it became a part of the reserve of the First Army for the Meuse-Argonne operation. On the night of October 19-20 it relieved the 32d Division in the front line as a part of the Fifth Corps.⁴³

The division then held the line extending from the vicinity of Ferme de la Cavanierie, 3 km. (1.8 miles) northwest from Romagne, where liaison was had with the 42d Division; thence the line extended through Bois de Monteville to include Romagne.⁴⁴

On October 20 the division made preparations for an advance to develop the enemy's main line of resistance and to complete the capture of Bois de Bantheville. This capture of the Bois de Bantheville proved to be quite an operation in itself, as the enemy defended his position with artillery and machine-gun fire and made a stubborn resistance until the afternoon of October 21. During October 21, 22, 23, and 24 the division remained in possession of Bois de Bantheville, maintaining contact with the enemy.

On October 25 orders were issued to adjust the right boundary of the division, thus turning over the western edge of the Bois de Bantheville to the 90th Division of the Third Corps. The remainder of the month was spent in making preparation for the advance of November 1.⁴⁴

MEDICAL DEPARTMENT ACTIVITIES

The field hospitals on October 15 were located 2 km. (1.2 miles) southwest of Montfaucon, 12 km. (7.4 miles) from the line, but on the 22d they advanced to a point 2 km. (1.2 miles) south of Eclisfontaine, where they were located on the road from that town to Charpentry, 7 km. (4.3 miles) from the front. Ambulance Company No. 354 established a dressing station at La Grange Ferme, 7 km. (4.3 miles) from the front, with all facilities for treating shock and for serving of hot drinks. To this point and from it to the rear two other ambulance companies carried wounded.⁴⁵ Evacuation from Bois de Bantheville for the week preceding the advance of November 1 was extremely difficult, for all wounded unable to walk had to be carried by litter to two collecting points west of Romagne, on the road to Sommerance, 3.5 km. (2.1 miles) from the line, where motor ambulances could reach them. This carry averaged 3 km. (1.8 miles) in length, through mud knee-deep, over rugged terrain. The roads through Bois de Bantheville were impassable to horse-drawn ambulances, and the narrow-gauge railway through the woods was so badly damaged that it could not be utilized. Difficulties were aggravated by scarcity of litter bearers.⁴⁶

During the interval October 15 to November 1, 2,228 patients passed through the triage, of whom 988 had wounds or injuries. Of this total, 1,441 belonged to the 89th Division, comprising 786 wounds and injuries and 655

* For map of activities of this division for this period, see Plate XL.

sick. On the afternoon of October 29 the field hospitals were shelled, some 15 or 20 high-explosive projectiles falling in and around them, wounding three men, of whom one died.⁴⁵

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CHAPTER XXVII

SECOND PHASE—Continued

THIRD CORPS

On October 4 the general attack of the American First Army was resumed. The Third Corps comprised the 80th Division on the left, the 4th in the center, and the 33d on the right. The corps front extended from Forges along the Meuse, skirting the northern edge of the Bois de la Cote Lemont, thence southwestwardly to just north of Nantillois.^{1, 2}

The mission of the 33d Division was to hold its present sector and protect the east flank of the 4th Division. The mission of the 4th Division was to take the Bois du Fays, Bois de Malaumont, and to advance to the north edge of Bois de Foret. It was not to attack across the open space east of the Bois du Fays and Bois de Malaumont. The mission of the 80th Division was to penetrate southwest of Bois du Fays and to continue to the northern edge of the Bois des Rappes and Les Clairs Chenes.¹

The attack was launched at 5.25 a. m., behind a heavy rolling barrage. Heavy machine-gun and artillery fire were put down by the enemy on the advancing units, particularly in the Bois des Ogons and Bois du Fays. Despite this, the corps line advanced, the center division pushing forward to a line just south of Cunel—Brieulles road. The left division met particularly stubborn resistance, and its advance was retarded. At the close of the day the corps line was as follows: Just south of the Bois des Ogons—north to include Bois du Fays, thence southeast to the north edge of Bois de Brieulles, and along this edge to the western limits of Bois de la Cote Lemont, thence continuing along the old line generally southeasterly.^{1, 2}

On October 5 the attack was continued against strong enemy resistance, centering chiefly in Bois des Ogons, and Wood 250, which were powerfully held by numerous and well-organized machine-gun nests. During the day the corps did not succeed in gaining any ground,¹ except on the left, where the southern portion of Bois des Ogons was taken.

On October 6 the troops advanced farther into Bois des Ogons, despite very powerful enemy resistance. Otherwise the corps line remained the same. Flanking hostile shelling from across the Meuse continued, as well as some harassing fire on the corps rear areas, in addition to heavy shelling of forward areas and front lines. Casualties for the day's operations were quite heavy.¹

On October 7 there was a slight advance in the line of the 80th, but none in that of the 4th Divisions. Positions were consolidated and improved. At 5 p. m., the 33d Division was detached from the Third Corps and attached to the French Seventeenth Corps. Field Order 24, Third Corps, issued on this date, contemplated the action to be taken by the front-line divisions in case

the attack of the French Seventeenth Corps on the right of the Third Corps, across the river, proved successful. This order directed that the divisions of the Third Corps make preparations for an advance and that the corps and divisional artillery assist the attack of the French Seventeenth Corps and of the American Fifth Corps.¹

On October 8 there was no change in the front line. The front was now held by the 80th and 4th Divisions, with the 5th Division in reserve. On October 9 at 3.30 p. m., the 80th Division attacked along the front, taking Ville-aux-Bois Ferme. The 4th Division attacked at 5.50 p. m., but was unable to advance because of heavy gas concentration laid down by the enemy artillery on Bois de Malaumont.¹

On October 10 the 4th and 80th Divisions attacked along the corps front early in the morning, behind a heavy barrage. The attack was only partially successful because of a severe, heavy artillery flanking fire from across the Meuse and stubborn machine-gun resistance encountered at all points. The line for the night was advanced approximately as follows: From a point about 0.5 km. (0.3 mile) southeast of Cunel, to and along the northern edge of Bois de Malaumont, thence to Cunel—Brieulles road to the west edge of Bois de Peut des Faux, thence along the north edge of this wood to and along the eastern edge of Bois du Fays, along the north edge of Bois de Brieulles to Cote 280, thence northeasterly following along the edge of Bois de la Cote Lemont.¹

On October 11 the attack was renewed early in the morning. Only local advances, mainly in the center, were realized, and progress was bitterly contested by heavy machine-gun fire and by flanking artillery support, as on previous days. During the night of October 11–12, the relief of the 80th Division and certain elements of the 4th Division, by the 5th Division, was successfully carried out. The corps front was now held by the 5th Division on the left and the 4th Division on the right.¹

On October 12 and 13 no change was made in the front. During the night of October 13–14, the 3d Division passed from command of the Fifth Corps to that of the Third Corps, relieved the 5th Division, by an extension to the right of the front line and elements of the 4th Division as far as the southeast edge of the Bois de Peut de Faux. For the night, the line was held by the 3d Division on the left of the corps from Cierges—Romagne, thence along the north edge of Bois de Foret to the northernmost portion of Bois du Fays. From this point the 4th Division held southeast to the Bois de Brieulles to Cote 280, thence northeast along the edge of the Bois de la Cote Lemont to the Meuse. The 90th Division was relieved from the Fourth Corps and assigned to the Third Corps. The 5th Division was held in the rear of the 3d Division as an attacking division in preparation for the operations of October 14.^{1, 2}

On October 14 at 8.30 a. m. the attack was renewed. The 5th Division, designated as the attacking division, passed through the line held by the 3d Division, which had been designated as support. On the right, the 4th Division executed a holding attack for assistance and was prepared to move upon

receipt of any orders from the corps. Following a heavy barrage and smoke screen, the troops advanced satisfactorily, despite heavy machine-gun and artillery fire direct from the enemy. Cunel was taken by the 5th Division, but their progress was held up in the vicinity of Bantheville and the Bois des Rappes by enfilade machine-gun fire from Bois de Bantheville. The 3d Division advanced 1 km. (0.6 mile) between the Bois de Foret and Bois de la Pultiere, where liaison with the 5th Division on the left was established. These changes represent the advance of the corps during the day, the 4th Division not advancing. The line now ran north of the western part of Bois de Foret, Bois de la Pultiere, and the ridge running southeast from the westernmost corner of Bois de la Pultiere.¹

On October 15 the attack was resumed, the 5th Division on the left and the 3d Division in the center being the attacking divisions, the 4th Division on the right holding as previously ordered. Progress, however, was slight because of unusually stubborn enemy resistance. Several counterattacks launched by the enemy were repulsed. The corps line for the night remained unchanged.¹

From October 16 to 19 no changes in the line were made. The period was marked by infantry inactivity. Organization and improvement of the positions for future advance were made.¹

On October 20 an attack with strong patrols was made at 7 a. m. with a view to developing the enemy Freya Stellung, which he had been organizing along the line Hill 261—Aincreville--Hill 270—Le Grand Carre Ferme, thence west. The attack progressed favorably, the main resistance encountered being the usual heavy machine-gun fire supported by artillery fire, especially from the northern part of the Bois des Rappes. By the close of the day, Bois des Clairs Chenes had been taken and cleaned out, and outposts were established 0.5 km. (0.3 mile) southeast of Bantheville and in the Bois des Rappes.^{1, 2}

On October 21 the action of the corps, to develop the enemy line of resistance, continued. At 11.30 a. m. both divisions made fresh attacks on Bois des Rappes and Hill 299, both of which were taken despite determined hostile opposition. An enemy counterattack projected against our troops was broken up, our advances all being held. All ground gained by the corps was immediately organized and the positions were consolidated. During the night October 21-22, relief of the 5th Division (less its artillery) by the 90th Division (less its artillery) was accomplished.¹

On October 22 patrols of the 3d Division were pushed to the outskirts of Briulles. Troops advanced and succeeded in taking all of Bois de Foret.¹

On October 23 the positions of the troops were further improved. The 90th Division on the left attacked Bantheville at 3 p. m. It took this town and the village of Bourrut. The line of the division was pushed along the ridge of Le Grand Carre Ferme. The 3d Division pushed strong patrols through Bois de Foret and seized a small woods 0.5 km. (0.3 mile) north of Hill 299. Other detachments occupied the high ground north of Briulles.¹

On October 24 Grand Carre Ferme was taken, after a heavy artillery concentration had been put upon it, but because of the heavy return fire of the

hostile artillery, our troops withdrew to a point 200 meters (218 yards) to the south. Otherwise our lines remained unchanged, except for minor improvements.¹

On October 25, 26, and 27 the days were characterized as being quiet. Our front lines were consolidated and organized during this period, and preparations were made for a new attack on November 1. During the night of October 26-27, the 3d Division was relieved by the 5th Division, the corps front then being held by the 90th Division on the left and the 5th Division on the right.¹

On October 28 our patrols maintained contact with the enemy all along our front, and entered Clery-le-Grand and Clery-le-Petit. Along the front of the 5th Division, an outpost line of machine guns was organized along the ridge of the high ground south of Andon Creek, thus dominating Aincreville, Clery-le-Grand and Clery-le-Petit.¹

On October 29 the day was quiet, patrolling being the only activity. No change was made in the front line.¹

On October 30 troops of the 5th Division entered and captured Aincreville, which was at once organized and consolidated with our outpost line. Other than this there was little activity.¹

On October 31 the corps front line was advanced 400 meters (436 yards) north of Aincreville. Otherwise the line remained unchanged. Final preparations were made on this date for the attack ordered for November 1.¹

MEDICAL DEPARTMENT ACTIVITIES

By October 3 the Montzeville—Esnes road was given over to two-way traffic, the Esnes—Malancourt—Cuisy road was limited to northbound traffic, the Esnes—Bethincourt—Cuisy road to southbound traffic, the Cuisy—Sept-sarges—Nantillois road to northbound traffic, the Cuisy—Montfaucon—Nantillois road to southbound traffic, and the Nantillois—Cunel—Bantherville road was made a two-way road for ambulances only. Examination of the map will show that these traffic rules made Bethincourt the proper place for a triage for all the divisions of the Third Corps in line. After October 3, evacuation was effected in this corps in pursuance of annex 4, Field Orders, No. 22, Headquarters Third Army Corps, October 3, 1918.³

Sorting stations, triages, all divisions, Bethincourt. From front to triage by divisions. From field hospitals to evacuation hospitals by corps. Nontransportable and gas hospitals, Bethincourt. After H hour, the corps surgeon will arrange for changes as the advance progresses. Routes: Divisions—down, Cuisy, to Bethincourt; return, Bethincourt—Malancourt—Cuisy. Corps—up, Esnes—Malancourt—Bethincourt—Esnes.⁴

The plan outlined in this order, made possible and convenient by the narrowness of the sector and the arrangement of the roads, created in effect a corps triage. This was truly such a formation tactically, although for convenience the divisions maintained administrative control over their respective sections therein. Each division established a field hospital to receive its own casualties for purposes of record, classification, and distribution. One division then established a field hospital for all the nontransportable wounded

of the corps, another division established a hospital for all gas cases in the corps, and the third established a hospital to serve as a corps reserve for overflow. Two of the four field hospitals of each division thus went to compose the corps triage. A third hospital of each division was retained outside the immediate battle zone for the reception of the sick, day by day, and to be used, if necessary, as a relay station for wounded on their long journey to the evacuation hospitals. The fourth field hospital of each division was held as a divisional reserve, to be moved, if necessary, beyond the triage first established, and to be used as a magnified dressing station. Later, when the line had progressed far enough, it was to become the divisional triage. The corps triage at Bethincourt worked very satisfactorily, and several divisions cooperated therein during the Meuse-Argonne operation; the 3d, 4th, 5th, 33d, 80th, and 90th all taking part as they came into battle. It retained this location until November 3.³

The establishment of the corps triage simplified evacuation. Among other advantages it was a medical center whose size and importance made possible procurement of exceptional conveniences. For example, solely because of its importance the engineers were willing to assist in constructing entrances, exits, and parking areas. This proved very valuable, for a motor vehicle which left the road in the Argonne was immediately mired.⁴

The group of field hospitals near Bethincourt was located on low ground made exceptionally soft by two weeks' continuous rain. It was necessary to construct a parking space for the use of vehicles. For this purpose 200 truckloads of stone were brought to the site, broken and used to form a parkway and sidings. This road building not only facilitated ambulance service, but it promoted the availability to the wounded of trucks returning to the rear, as with a good road they were not delayed. Personnel of the Medical Department did most of the work involved in this construction.

There never were enough ambulances for evacuation. Divisional ambulances were used for transport of patients to and between the field hospitals. Those of the corps for transport between field and army hospitals, while between and back of the latter evacuations were effected by the army. Until the corps had received a sanitary train it operated with transport loaned it by the army; in turn (in time of stress), the corps was frequently called upon to lend ambulances to its constituent divisions. The Third Corps sanitary train had its headquarters at Sivry-la-Perche during the time the corps triage was at Bethincourt; it was found a great help to have a central point where the transport needs of each and all divisions promptly became manifest. Trucks had to be used extensively for evacuation purposes during the most active periods. As the road to the rear ran past the Bethincourt triage the corps surgeon obtained a corps order for trucks of any unit to stop there on signal and take on wounded. These trucks could not, it is true, be diverted from their established route to permit conveyance of patients to the hospitals at Souilly, where the slightly wounded were to go, but it was possible to require them to stop long enough to unload these wounded at Fromereville or Sivry-la-Perche. For this reason, relay stations grew up at these points.⁴

When the triage at Bethincourt became thoroughly well organized, the corps surgeon placed a representative there who settled differences between division medical officers concerning the distribution of transportation. This officer maintained at all times a reserve of corps ambulances by communicating with the corps surgeon by telephone, or, when this was not possible, by messenger. He controlled the system of stopping trucks by signal, and through his efforts traffic was impeded as little as possible under the circumstances. The evacuation of large numbers was systematized by coordinating the divisional and corps transport services at the Bethincourt triage, by providing at Sivry-la-Perche a station where the corps sanitary train could rest and do repair work, and by maintaining contact at all times between the corps triage, the corps surgeon, and the chief surgeon of the First Army.⁴

The last-mentioned officer fully appreciated the difficulties incident to the great length of the haul for wounded, and at the first possible moment he moved the army hospitals forward. However, as our lines were advanced over the nearly impassable terrain, there was an interval when wounded could not be evacuated to such hospitals rapidly enough, and relief had to be given them farther forward. To meet this need, the field hospital in reserve, or least active, in each division was moved past the other field hospitals to the most advanced point tenable. This was not intended as a triage, but as a rest place where hot food, warm blankets, emergency surgical aid, and re-dressings were available. Some classification of patients was possible here, but it was not the formal sorting performed at the triage. The facilities so provided for rest and comfort were especially welcome to wounded coming in during bad nights or when traffic was blocked. When the lines advanced these field hospitals, which had been gradually organized and properly located with this change in view, were transformed into triages by the simple procedure of sending up the trained groups of triage personnel, while the former triage hospitals in the rear went into reserve. This "leapfrogging" in divisions and corps came to be a well-understood maneuver and was accomplished repeatedly without interruption of service.⁵

At the triage of the corps, specialization grew up; not the result of any preconceived plan but of a natural tendency, for it was found to present great advantages. In preparation for battle, professional teams, especially skilled in the treatment of shock and surgical cases, had been organized and assigned here. These prepared many nontransportable cases for evacuation. Similarly a special service developed in the gas hospitals. The corps and army consultants, moreover, found the corps triage a convenient center for observation of how professional work was being done.⁵

The difficulty due to the long journey which the wounded had to undergo after they passed the advance stations and the corps triage was mitigated by relay stations established by the various divisions at Sivry-la-Perche and Fromereville. Trucks filled with slightly wounded poured their patients into these stations, where they were given hot food, opportunities for rest, and, if need be, were re-dressed before being transferred to French omnibuses for proper distribution to hospitals in the rear. Each relay station had a depart-

ment for the reception of the sick day by day and for the definitive treatment and return to the lines of slight cases of illness. Errors, though few, in classification at the triage, or subsequent changes in the condition of wounded, sometimes made reclassification at the relay stations advisable. A very great advantage which these stations enjoyed was the fact that they were out of the battle zone and therefore within easy communication by messengers or telephone, so that in them needed changes could be speedily made in the routing of patients. In spite of close cooperation between the army and the corps, the operating facilities of certain evacuation hospitals sometimes became overtaxed, while at the same time in others the surgical teams were not working to capacity. On notification from the army, a message to the proper relay station would correct such a condition, by altering the distribution of patients.⁵

Though the advance during the second phase of the Meuse-Argonne was relatively slight, the combat was, in general terms, continuous, and though the number of battle casualties on certain days was much greater than on others the stream of wounded never ceased. Many changes in the arrangements for disposition of wounded had to be made to meet the developments of the military situation. Thus, when the 33d Division crossed the Meuse it was lost to the corps, but it continued to use Glorieux as a triage until the site was occupied by Evacuation Hospital No. 15, which arrived on October 13 and began operating the next day. When the 5th Division relieved the 80th as part of the corps its medical department units were located at the corps triage in the places vacated by their predecessors.⁶

As the corps advanced, the distance between the line and the triage progressively increased. As the right flank continued to rest on the Meuse and there was a constant turning movement which changed the face of the corps from north to east, the corps surgeon anticipated that the direction of evacuation would be to the west toward Varennes, instead of to the south. Mobile Hospital No. 1 was moved to Fromereville on October 9 and to Esnes on October 27, serving the Third Corps as a hospital for the nontransportable wounded. When this unit moved to Esnes, Evacuation Hospital No. 4 moved to Fromereville, receiving severely wounded after October 31. Evacuation Hospitals No. 6 and No. 7, at Souilly, continued to care for the sick and slightly wounded sent by truck, while Evacuation Hospital No. 8 remained at Petit Maujouy for the overflow of wounded who could not be attended by Evacuation Hospital No. 4 and for the moderately and severely wounded who came in from the right flank along the Meuse. Gas cases were retained at the triage at Bethincourt until ready for evacuation to La Morlette, where the corps gas hospital was located. Contagious and mental cases still had to undergo the long haul to Benoit Vaux. Supply parks which had been at Vaubecourt, Fleury, and Souilly were augmented by parks at Les Islettes and Verdun.⁶

After Mobile Hospital No. 1 was established at Esnes, and Evacuation Hospital No. 4 at Fromereville, the wounded transport problem of the Third Corps was for a time much simplified. While Mobile Hospital No. 1 was at

Fromereville, in order that it might be close to the terminus of a 60-cm. railway leading to Souilly, it established a camp near by instead of using buildings in the village. The little freight cars on this road were ingeniously converted into cars for carrying patients, and many cases were evacuated by this route; but as the roadbed was in bad condition, and derailments were frequent, the use of the railway for this purpose was discontinued.⁷

The following memorandum was published by the corps surgeon to the division surgeons:

OCTOBER 18, 1918.

1. A study of the map will indicate to division surgeons that the sector occupied by each division of this corps is characterized by its narrow front and great depth.

2. The circulation order made necessary by the road problem indicates that for the present at least the site now occupied by the divisional triages is the logical one.

3. A recommendation has been made to bring forward to Esnes a mobile surgical hospital, and an effort will be made to establish an evacuation hospital nearer the triages than is now the case.

4. The chief surgeon of the First Army has written as follows:

"The solution brings us face to face with a concrete fact which admits of no digression into the realm of theory, viz, we must accept the conditions imposed, difficult as they are, and make the best use of the facilities at hand with a view to care for the sick and wounded paramount to all else, and the shortening of transport distance for the gravely injured.

"After close study the sole way we may accomplish this is by establishing the divisional field hospitals in a line, one behind the other, to serve as places of reception where a man may be warmed, fed, dressed, treated for shock and hemorrhage, and gradually passed through one to the other until he arrives at the evacuation hospital.

"A slightly wounded man can travel the whole distance without injury, but winter, which is rigorous in this sector, is upon us, and it behooves us to establish points where the exhausted, chilled, and badly injured may be removed from an ambulance and received till such time as they may proceed."

5. In studying the best means of carrying out the desires of the chief surgeon, 1st Army, it will be noted that each division has now established:

1st. A divisional triage.

2d. One hospital devoted to corps purposes as a gas hospital, a nontransportable hospital and a corps reserve hospital.

3d. It is required that each division maintain a hospital for the care of the sick of the division.

6. Therefore, each division has left a field hospital to be used as a rest station for the sick and wounded in a far advanced position.

7. Each division will at once establish such a rest station after obtaining the proper authority from the G-1 of his division.

8. The 5th Division has already established its hospital at Nantillois. It is suggested that the 3d Division select a site near the same place and that the 4th Division take advantage of the shelter said to exist in the southern boundaries of the Bois de Septsarges, northeast of the town of Septsarges.

9. A review of the situation after the establishment of these rest stations will show the first element of the echelon on a level with Nantillois, the second at Bethincourt, and the third on a level with Fromereville and Sivry-la-Perche. If a mobile surgical hospital is established at Esnes, an intervening one will be established between the zone of Bethincourt and that of Fromereville and Sivry-la-Perche.

10. The sick and wounded of any division may be admitted to any of the hospitals established by units of this Corps, but a serious effort should be made to have the casualties of any one division pass through its own triage.

11. The provisions of paragraph 8 are general and apply to divisions relieving those now in line.

The following memorandum concerning triage operations was published by the surgeon, Third Corps, during the Meuse-Argonne operation:

OCTOBER 18, 1918.

Memorandum for division surgeons:

1. Observation shows that correct triage is not being carried out in some of the divisions of this corps.

2. Attention is especially invited to the following requirements of Memorandum No. 4, this office, dated September 19, 1918:

(a) That all casualties, both sick and wounded, will pass through the triage.

(b) That the hospital used as a triage has three chief functions:

1st. Triage or sorting.

2d. Care of nontransportable cases.

3d. Care of gassed cases.

(c) That the triage officer must be one of sound judgment and must be possessed of the power to decide quickly and accurately and that he must be properly advised by representatives of the special divisions or officers carefully selected by the division surgeon as advisers.

3. It has been reported to this office that cases are being sent directly to the gas hospital and nontransportable hospital, ordered established by the corps, without preliminary triage. This practice must be stopped. In each divisional triage there must be maintained the gas department and a nontransportable department.

4. The faults in the organization and functioning of the triage usually reported to this office are:

(a) Lack of training in the triage personnel during times of quiescence.

(b) The lack of distinct departments in the triage for the three chief purposes—triaging, treatment of gassed patients, and the treatment of nontransportables.

(c) Lack of system in the feeding of patients, methods used being incoordinated and inadequate.

(d) Dispersion of the triage function, cases being taken to the various departments of the hospital and elements of the triage group going to the various classes of cases at intervals instead of having all classes of cases going to a well-established centralized triage where records are made and from which patients are distributed to the various departments.

(e) The lack of control of the triage officer himself over the various functions of the triage hospital, it being a common practice for him to delegate his functions to inexperienced junior officers and noncommissioned officers.

The following memorandum, under date of October 27, was addressed by the corps surgeon to all division surgeons:

Subject: Owing to the confusion concerning the definition of "nontransportable," the following is transmitted for the information and guidance of triage officers:

1. Under present conditions all cases, except the following, after inspection of dressing and splints, are transportables:

(a) Cases showing active hemorrhage.

(b) Cases in shock.

(c) Sucking chests (as modified below).

(d) Partial traumatic amputations in which all blood supply below the site of injury has been severed.

2. Modifications, according to situations liable to arise, are as follows:

(a) Under ordinary conditions, evacuation from the time of injury to arrival at the mobile or evacuation hospital should be carried out within from six to ten hours in this sector. Shorter time is desired, and delay in dressing stations and triage will be reduced to the minimum.

(b) Cases arriving at the triage in shock will be evacuated within 15 hours to the hospital designated for severely wounded if the condition warrants it.

(c) Shock cases not showing evidence of sufficient improvement within two hours to indicate that they will become transportable will be operated upon at the triage if condition of patient warrants operation.

(d) The nontransportable department will be cleared as far as possible during the early stages of battle in order to be prepared later to attend to the more severely wounded.

(e) When wounded arrive at the triage after more than 24 hours, cases liable to develop gas infection become nontransportable. They are chiefly wounds of the buttock and the calf.

(f) In addition, all cases which show that they are bearing transportation poorly should be operated upon at the triage, provided they do not arrive in such numbers that they would receive attention as quickly if sent on to the evacuation or mobile hospital.

(g) In cases of delayed transportation between the triage and the rear so that 24 hours or more are required, seemingly slight injuries should be classified as nontransportable and be given first attention. These are the cases that are practically sure to recover if gas infection does not arise.

(h) All wounds arriving late at the triage should be carefully examined and smelt for evidence of gas infection. If gas is evident débridement should be done and the case evacuated so that suitable after-treatment may be given as soon as possible. Notations of such conditions should be made upon the field card.

3. The following remarks concern injuries to special regions:

Head.—These cases usually bear transportation better before operation than after, and should generally be classified as transportable. If operated upon, after proper débridement, removal of foreign body, and control of hemorrhage, they should be closed tight.

Chest.—Sucking wounds can usually be made transportable by placing gauze over the wound and strapping tightly. The gauze should not be packed deeply into the wound. If this does not work, the case is nontransportable and should be operated upon. Chests showing evidence of progressive hemorrhage should be operated upon. All others are transportable. Through-and-through machine gun bullet wounds of the chest showing no evidence of hemorrhage will not be operated under any conditions, except for a possible cleaning up, or superficial débridement of wounds of exit and entrance, in case they are dirty.

Abdomen.—These wounds should be operated upon within 15 hours. Otherwise leave them alone. It therefore follows that if it appears that such cases can not reach a mobile or evacuation hospital within that time limit, the triage is the place for the operation.

4. Notations will be made on diagnosis tags of the time the wounded man was found, the time of reaching aid station, and the time of arrival at triage.

5. Make the total time as short as possible. Rapid transportation is the best prevention against gas infection.

6. *No sutures will be placed in any wounds except for cleansing abdomens, chests, and heads.*

The following corps surgeon orders were issued October 27 to the regulating officer:

1. You will proceed during the afternoon of October 27, 1918, to Bethincourt, and act as the representative of this office as regulating officer.

2. It will be your duty to keep this office constantly informed of—

(a) The state of transportation.

(b) Any defect in the triage system which you can not correct on the spot.

(c) Any unusual event.

3. You will supervise the triage system of the divisions and will give such orders as may be necessary to the triage officers or regulating officers direct. [Amended by memo. dated October 31.]

4. It is suggested that you require the triage officers to classify their patients and the regulating officers of the triage to load them according to the following classifications:

- (a) Very seriously wounded.
- (b) Moderately wounded (ambulance cases).
- (c) Lightly wounded (truck cases).
- (d) Evacuatable gas cases.
- (e) Evacuatable normal sick.
- (f) Contagious.
- (g) Psychopathic.

If you establish a station near the triages, but beyond both of them, along the outgoing road, and detail from the divisions having triages at Bethincourt personnel to direct ambulances, loaded as stated above, to the proper hospital, it is believed that you will be able to maintain a sufficient hold on the situation.

5. Under the terms of the evacuation order of the 1st Army, you will evacuate patients as follows:

- (a) Seriously wounded to Mobile Surgical Hospital No. 1, Esnes.
- (b) Moderately wounded to Evacuation Hospital No. 4, at Fontaine Ronton.
- (c) Slightly wounded to Evacuation Hospitals Nos. 6 and 7, Souilly.
- (d) Normal sick to Evacuation Hospitals Nos. 6 and 7, Souilly.
- (e) Contagious sick to the French contagious hospital, at Benoite-Vaux.
- (f) Psychopathic cases to the Army Psychopathic Hospital No. 1, at Benoite-Vaux.
- (g) Gas cases to the gas hospital, at La Morlette.

6. All truck cases are to be evacuated to the relay station established by the divisions at Sivry-la-Perche, and trucks diverting for the purpose should be directed to proceed on their normal course, after unloading patients at that place.

7. Every ambulance leaving with patients for Mobile Hospital No. 1 should be informed that if, on reporting at the hospital, it is found to be full they will be directed to continue to Evacuation Hospital No. 15 at Glorieux; also ambulances proceeding to Evacuation Hospital No. 4 should be prepared, if that hospital is jammed, to receive orders to proceed to Evacuation Hospital No. 8, at Petit Maujouy. Also, ambulances loaded with gas patients proceeding to La Morlette may receive directions to proceed to Rambluzin.

8. Divisional ambulances will evacuate normal and contagious sick from the triage to the sick hospitals, the corps evacuating system being responsible for the evacuation of them farther to the rear.

9. It is the desire that existing orders be carried out rigidly with reference to the sorting and evacuation of gas cases and of psychopathic cases and that every effort be made to carry out the triage orders of the corps as written.

10. You are authorized to act for the corps surgeon in any situation which may arise.

The following corps surgeon memorandum was issued October 30 to division surgeons:

Memoranda from this office dated September 19, 1918, and October 10, 1918, on the subject of triage, are hereby revoked and the following substituted therefor:

The following instructions for the operation of the field hospital used as a sorting station (triage) are sent you for your information and guidance:

I. All casualties, both sick and wounded, will pass through the triage.

II. The functions of a triage are in general:

1. The grouping of casualties into—

- (a) Transportable.
- (b) Nontransportable.

2. The classification of casualties into—

- (a) G. S. W.—severe.
- (b) G. S. W.—slight.
- (c) Psychoneurosis.

(d) Gassed.

(e) Injured.

(f) Sick.

3. The operative treatment of surgical cases to make those transportable if possible.

4. The revision of splints and dressings.

5. The administration of antitetanic serum when the diagnosis tag, or the characteristic sign on the patient's forehead, does not show that it has already been administered.

6. The bathing and changing of clothing of slight mustard-gas cases to prepare them for prompt return to duty.

7. The hospitalization of absolutely nontransportable cases (wounded, gassed, and sick), together with the surgical or medical treatment of the same.

8. Contributing to the comfort of all who remain permanently or temporarily in the sorting station by the administration of hot drinks, food, and by other means.

III. The sorting station is not a place for hospitalization, except for the nontransportable, and only then when proper hospitals for nontransportable wounded and gassed are not provided near by.

IV. The commanding officer of the field hospital acting as triage shall himself function as triage officer, or name a medical officer to act as such. The division surgeon will assign, as advisers to the triage officer during periods of activity, either representatives of the special divisions, or medical officers especially qualified in (a) orthopedics; (b) psychiatry; (c) general medicine, including the treatment of shock and gassed cases; and (d) an officer especially skilled in surgery.

V. Since many cases will be evacuated directly from the triage to army hospitals in the rear the triage is the only point where any accurate report of the divisional losses can be obtained. To this end it has proven of great advantage to the statistical department of the division to place clerks at the triage to augment the medical department clerical force in making a nominal check list of all cases passing through. The following procedure is suggested as having been found practicable. A competent clerk will collect the necessary data from each case as admitted. The triage officer, or his representative, will examine the cases, marking the disposition of same on the back of the diagnosis tag with a colored pencil. A clerk will then follow, note the disposition of the case, and indicate on the diagnosis tag that record is complete by marking same with a fixed symbol. Cross in a circle is suggested. The noncommissioned officer in charge of litter detail will assure himself that each tag bears the symbol before evacuating such a case from the triage.

VI. Records will be collected in such a manner that cases from—

(a) Division making report.

(b) All other U. S. divisions. (Each division separately.)

(c) Allied troops.

(d) Enemy.

Will show for each case—

(a) Number.

(b) Name.

(c) Rank.

(d) Organization.

(e) Nature of casualty.

(f) Disposition.

VII. In order that complete record of divisional losses may be maintained, division surgeons will send to each neighboring division surgeon the daily report of those cases belonging to the latter's division which have passed through the former's triage. This work is a proper function for the division surgeon's office, and will not be added to the paper work of the triage group.

The triage group is not a field hospital and does not within itself admit patients. Forms 547 and 648 A. G. O., G. H. Q., need not, therefore, be prepared nor the field medical card started. The same rule applies to sanitary formations which function as

advance dressing stations, rest, or relay stations, so long as the organizations hold patients who are awaiting further evacuation to the rear. If, however, a case is hospitalized—that is, if it is admitted to the gas department or nontransportable department for definitive treatment—or if a case is completed as by return to duty proper, record must be made. Cases dying in triage or enroute to triage will be forwarded and admitted to a hospital where the necessary records will be prepared and proper provision made for burial. Twenty-four hours will be considered the time limit within which sanitary formations can hold patients awaiting evacuation without considering that such cases have been hospitalized.

VIII. A numerical summary, classified as outlined in paragraph 1, corrected Memorandum No. 1, this office, dated October 12, covering the twenty-four hour period from 6 a. m. to 6 p. m. will be in the corps surgeon's office before 7.30 a. m. daily. Report will be telephoned or sent by special courier from the triage or from the division surgeon's office, whichever system is considered the quickest.

IX. Nontransportable wounded will be admitted immediately to the nontransportable section of the triage, or transferred at once to the field hospital or other hospital devoted to nontransportable cases. Nontransportable gas cases will also be admitted to the gas section of the triage, or transferred at once to the field hospital or other hospital devoted to the treatment of gassed cases.

X. Every effort will be made to prevent evacuation to the rear and to cause prompt return to duty at the front of men found not to be proper subjects for evacuation.

XI. The personnel of the field hospital acting as a triage should be divided into appropriate groups for the various departments, viz:

A triage group.

A surgical group.

A gas group.

XII. The following personnel is suggested as making a triage group to work under the supervision of the triage officer. There should be two such groups working 12 hours each.

Two medical officers.

Two noncommissioned officers.

Two clerks.

One stenographer.

Twelve litter bearers.

Two men for kitchen detail.

One ward attendant for each tent in which patients are held and two men for dispensary and dressing room.

XIII. The training of triage personnel is important to bring out the proper grouping of cases, correct record, and speedy evacuation. The triage officer must be an officer of sound judgment and must be possessed of power to decide quickly and accurately.

XIV. No radical departure from these instructions will be made, except by order from the corps surgeon.

THE 80TH DIVISION

Prior to the attack of October 4, the division was assembled in the vicinity of Cuisy. On the afternoon of the 3d, preparations were made for an attack in the Nantillois—Cunel sector, then held by the troops of the 79th and 4th Divisions. The eastern limit of the zone of action extended from Septsarges, 400 meters (436 yards) from the western edge of Bois du Fays, thence north through the Bois de Malaumont—Cote 299—Aincreville. The western limit of the zone of action was Montfaucon—Cote 259—Nantillois—Cunel road—Bantheville—Andevanne.⁸

At 5.25 a. m., October 4, the 159th Brigade (less one battalion, 318th Infantry) attacked under cover of an artillery barrage. Its parallel of de-

parture was Cierges—Nantillois—Brieulles road, north of Nantillois. The 160th Brigade remained in reserve, ready to move one or more of its units forward on 15 minutes' notice.⁸

In the initial attack the infantry advanced at a considerable distance behind the barrage because the troops had to reach their unreconnoitered assembly positions in the dark. Upon reaching the line of Hill 274, the first wave was met by very heavy machine-gun fire from the north, northeast, and west and by intense artillery fire from the north, northeast, and east, part of this fire enfilading the attacking line. A few troops reached the edge of Bois des Ogons. No advance could be made beyond this position, however, during the day. A new attack was ordered for the afternoon of October 4. At 5.30 p. m. this attack took place on the whole front, after an artillery preparation. It failed, but troops filtered in through the Bois des Ogons under cover of darkness. However, they were unable to organize and hold this forward ground in the face of enemy machine-gun and artillery fire,⁸ and the line formed south of Bois des Ogons.

On October 5 the attack was resumed at 6 p. m., and the line was advanced to the southern portion of Bois des Ogons, without heavy casualties.⁸

On October 6 the position obtained was held during the day, and defensive organization was begun.⁸

During the night of October 6-7 the entire 159th Brigade withdrew to a position south of Cuisy.⁸

On October 9, in the general advance, the 80th Division reached and held the Cunel—Brieulles road.⁸

On October 11, at 7 a. m., the hour set for the resumption of the advance, our troops formed in the rear of a barrage. Just prior to "H" hour, however, the enemy laid annihilating artillery fire on the left of the lines and decimated two companies of the attacking troops and made many ineffectives in two others. Despite this, however, the right of the line and the reorganized left went forward to the attack and made slight gains.⁸ At the end of the day, though, they had not been able to maintain a position north of the Cunel—Brieulles road.⁸

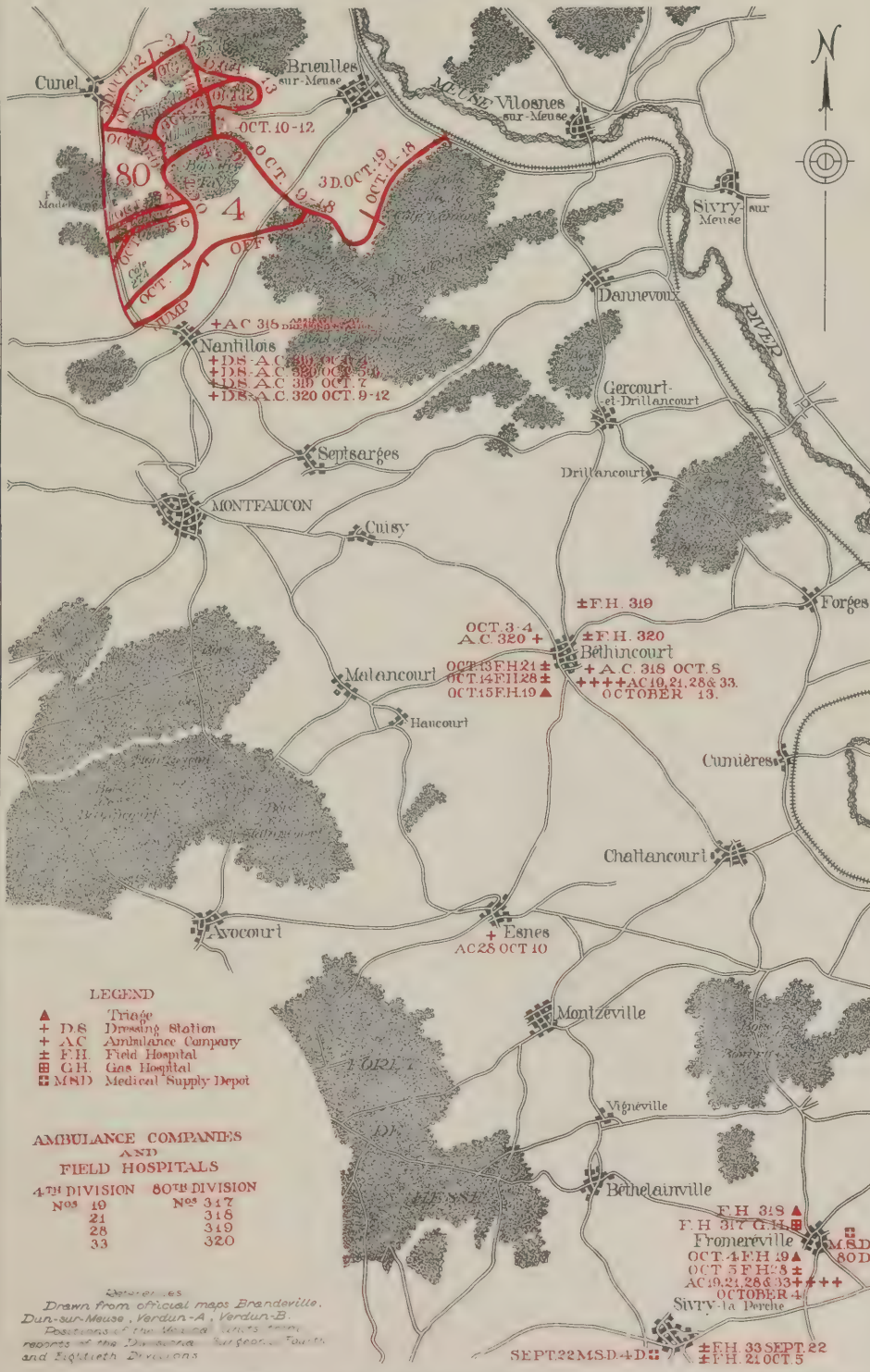
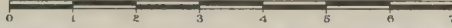
On October 11, at nightfall, the front line was held by one battalion of the 319th Infantry on the left and one battalion of the 320th Infantry on the right, echeloned in depth; one battalion of the 320th Infantry in the southern portion of the Bois de Malaumont; one battalion of the 320th Infantry west of La Ville aux Bois Ferme, echeloned in depth. The reserve battalion of the 319th Infantry was in the northern part of the Bois des Ogons. During the night of October 11-12 the division (less the Artillery brigade) was relieved by the 5th Division. It then moved to the vicinity of Thiaucourt in the army reserve.⁸

MEDICAL DEPARTMENT ACTIVITIES

Ambulance Company No. 317 was functioning at St. Nazaire and did not rejoin the 80th Division until after the division was withdrawn. Ambulance Company No. 318 assisted in the operation of a dressing station at Nantillois and litter-bearer evacuations in front of it, and performed various services

MEUSE - ARGONNE OPERATION SECOND PHASE 4TH AND 80TH DIVISIONS

Scale in Kilometers



for Ambulance Companies No. 319 and No. 320. Ambulance Company No. 319 established a dressing station at Nantillois on October 4 which was taken over by Ambulance Company No. 320 on the 5th and 6th. Ambulance Company No. 319 then resumed operations until the 8th, when Ambulance Company No. 320 took the dressing station over and maintained it until the division withdrew. This station cleared about 400 patients a day, though both ambulance companies suffered casualties from shell fire while on duty here. As stated above, they were assisted here and in advance of it by Ambulance Company No. 318.⁹

Field Hospital No. 317 continued to operate a hospital for gassed and sick at Fromereville, where from September 26 to October 12 it cared for 1,762 patients. At the same point Field Hospital No. 318 operated the triage, receiving 5,915 patients during the same time, this number including 1,226 patients belonging to the 4th Division. The triage reports showed that it had received 1,610 gassed patients, of whom 679 came from the 80th Division. Two per cent of these cases were serious, while 20 per cent of the patients admitted as gas casualties showed no symptoms of that condition. Of the total number received, diagnosed as gassed, 525 were returned to duty.¹⁰

Field Hospital No. 319 at Bethincourt, in conjunction with Field Hospital No. 320, cared for 3,176 surgical cases. Approximately 20 per cent of the wounded were classed as seriously wounded, 10 per cent as having wounds of moderate severity, and 70 per cent as slightly wounded. About 10 per cent of wounds were caused by high-explosive shells, 10 per cent by shrapnel, and 80 per cent by machine-gun or rifle bullets. About 10 per cent of the sick were seriously ill, suffering chiefly from pulmonary or intestinal diseases.¹¹

THE 4TH DIVISION ^a

On October 4 the 4th Division, which had been holding a rather long sector from near the Meuse to a point north of Nantillois, attacked at 5.30 a. m. The attack was made northwestwardly from the Nantillois—Briulles road, the objective being Cote 299, and the north edge of Bois de Foret. The attack progressed favorably, meeting little resistance except from machine-gun nests, which, however, were very active in opposition. The Bois du Fays was taken and our troops crossed the Cunel—Briulles road, advanced through the woods on the north, and approached the Bois de Foret.¹²

Again the advance was delayed by exposure of the left flank, for the Bois des Ogons had not been taken at this time. Consequently our troops were compelled to fall back and to organize a temporary line of defense along the Fond de Ville-aux-Bois, fully 1 km. (0.6 mile) south of the points taken in the attack. The 59th Infantry protected both flanks of the salient thus formed, and the 47th Infantry held the line on the right along the north edge of the Bois de Briulles. The line thus formed (western edge of Bois du Fays—Fond de Ville-aux-Bois—eastern edge of Bois du Fays—northern edge of

^a For map of activities of this division for this period, see Plate XLI.

Bois de Brioules) remained the same until October 9. The 4th Division had occupied the western edge of Bois du Fays on the 5th, in order to maintain contact with the 80th Division and to assist in its progression. The Bois des Ogons, on the left of the 4th Division, was taken by the 80th Division on the night of October 5, but the line of the 80th Division remained nearly 1 km. (0.6 mile) less advanced than the line of the 8th Brigade, 4th Division, making it necessary to protect the left of the Bois du Fays. Several counter-attacks and attempts at infiltration on both sides of the Bois du Fays were made by the enemy and were repulsed. After the early morning counter-attack on October 6, activity in the 4th Division sector was limited to patrolling, occasional machine-gun fire, and to continued harassing shell fire.¹²

On October 9 in the evening, an attack on Bois de Malaumont was made. It was planned that the attack should be made in line with the 80th Division, on the left. It was learned through liaison with the 80th Division that this attack would begin at 4 p. m. The advance of the 4th Division was accordingly scheduled at 5.40 p. m. The 39th Infantry, having taken up a position in the Bois du Fays, attacked northward from Bois Fond de Ville-aux-Bois. The 47th Infantry continued to hold the line along the northern portion of the Bois de Brioules. The first attack was not successful, and the troops suffered considerably from artillery fire from the right rear. Furthermore, a heavy gas concentration necessitated the wearing of masks, which made progress very slow in the thick underbrush and in the approaching darkness. Units, in consequence, became separated, so the advance was halted and the troops were withdrawn for reorganization, to the starting point. The right of the 80th Division likewise had failed to progress.¹²

On October 10, at 7 a. m., the attack was resumed. Owing to the heavy resistance from shell and machine-gun fire, and to the dense undergrowth, the troops were unable to keep up with the barrage in the morning, and the advance got no farther than the northern edge of Bois de Peut de Faux.¹²

In the afternoon the southern portion of the Bois de Foret was penetrated, but machine-gun resistance rendered a consolidation of the positions impossible before nightfall, and all troops were withdrawn to the northern edge of Bois de Peut de Faux for the night.¹²

Again on October 11, at 7 a. m., the attack was renewed. At 8.30 a. m. the troops had reached the railroad in the Bois de Foret and were pressing on, though meeting considerable resistance on the right. During the day the advance was pushed to the northern edge of the Bois de Foret, and at 6 p. m. division patrols were on Cote 299.¹²

No attack was made on October 12 because it was anticipated that units of the 5th Division would relieve the 4th Division. This relief did not take place as planned, but during the night of October 12-13 and the morning of the 13th the 39th Infantry and part of the 11th Machine Gun Battalion were relieved by the 4th Infantry of the 3d Division.¹²

From October 13 to 19 the period was characterized as a holding action, for the division was not called upon to make any attack. On the contrary, it

concentrated its efforts upon the defense of the division sector. The divisional front now extended from the northernmost point of Bois du Fays down the northeast edge of Bois du Fays, thence to Trench de Teton, thence to the northern corner of Bois de la Cote Lemont, on the Meuse. This was the situation when the division was relieved from the line on October 20th and became a part of the American Second Army.¹²

MEDICAL DEPARTMENT ACTIVITIES

The evacuation service of the 4th Division in this (the second) phase of the operation was a continuation of that already described for the first phase. As there was not much movement of the line, Medical Department formations were not moved frequently. On October 15 the field hospitals were advanced to Bethincourt, where they remained until the division was relieved. There Field Hospital No. 19 performed triage duty, and, in connection with the 3d and 5th Divisions, a hospital for nontransportable wounded was operated. Field Hospital No. 33, at Sivry-la-Perche, received the divisional sick.¹³

THE 33D DIVISION

As has been stated at the beginning of this chapter, the mission of the 33d Division, when the second phase of the Meuse-Argonne operation began, was to hold its present sector and to protect the east flank of the 4th Division. Also it has been seen that the 33d ceased to be a part of the Third Corps on October 7 and was attached to the French Seventeenth Corps, then a part of the American First Army. During the period October 4-7, the 33d had no engagement of major importance.¹

In view of the fact that from October 7 forward the greater activities of the 33d Division during the second phase of the Meuse-Argonne operation occurred east of the Meuse, further discussion of the operations is given at the end of this section with that of other troops so serving.

THE 5TH DIVISION ^b

By 6 a. m., on October 12, the relief of the 80th Division by the 5th Division had been completed. There had been a modification in the orders. The original order required the holding of a line in advance of that actually held. At 1.30 a. m. on October 12, arrangement was made with the commanding general, 160th Infantry Brigade of the 80th Division, that no forward movement would be attempted until the relief had been completed. Finally it was ordered that four battalions of the 9th Infantry Brigade should remain south of the east and west line from La Ville aux Bois and that the 4th Division would occupy position on their left flank, previously outlined as part of the 5th Division sector. At 6.30 a. m., having completed the relief, troops of the 9th Infantry Brigade went forward on strong reconnaissance patrols along the 60-cm. railroad cut east of Cunel and into the Bois de la Pultiere.¹⁴

^b For map of activities of this division for this period, see Plate XL.

On October 13 an attack by this division in the direction of Le Grand Carre Ferme, in conjunction with one of the 42d Division through Sommerance, to form a junction at the farm, had been set unofficially for the day, to be made by the 10th Infantry Brigade for this division. Owing to their distance from the line and to the distribution of the troops, a postponement of 24 hours was made. By the order the line of attack was west of north instead of north, as the frontage of the division had previously been. Due to the fact that, as planned, the line of attack placed the right flank of the troops of this division within 400 meters (436 yards) of the Bois de la Pultiere and the Bois des Rappes, which the enemy still held, and to the fact that the smoke barrage which our artillery could place could last for only one hour, orders of the division provided that the 9th Infantry Brigade should attack from the south the Bois de la Pultiere and the Bois des Rappes. At 10.30 p. m. the commanding general of the 10th Infantry Brigade, which was to make the attack, received a copy of the attack order of the 64th Brigade, 32d Division, Fifth Corps, which was to attack on the west and to protect his left flank. This order contemplated an attack on Romagne-sous-Montfaucon at "H" plus 6 hours, instead of "H" hour. Romagne was occupied by the enemy. A change of the hour of attack of the 64th Brigade was requested and the hour was changed from "H" plus 6 hours to "H" plus 3 hours, "H" hour being fixed at 5.30 a. m. on the 14th. Despite this effort at cooperation, Romagne was not taken until after 2 p. m. on the 14th. On October 14 the 10th Infantry Brigade attacked at 8.30 a. m. The enemy put down a strong counteroffensive barrage from 6 to 8 a. m. This produced losses and some confusion. Machine-gun fire was encountered almost immediately, indicating that our destructive fire and barrage had not been sufficient to hold down the enemy. Our attack passed through an effective barrage put down by the enemy at 8.33 a. m. with heavy losses. None the less, the advance steadily progressed. Upon mounting the slopes to the north of the Romagne—Cunel road, our troops met a concentration of machine-gun fire from the Bois des Rappes, Bois de la Pultiere, Romagne, and the direction of Bantheville, and the attack was brought to a halt in attempting to pass into the valley of the Andon. The 9th Infantry Brigade was stopped in the Bois de la Pultiere, after having passed Cunel. At 4 p. m. the attack was made on Bois de la Pultiere and the Bois des Rappes. This attack was successful in taking the Bois de la Pultiere, and the troops held their positions and entrenched themselves for the night.¹⁴

On the 15th the attack was resumed at 8 a. m. Stubborn resistance was encountered on the northeast edge of the Bois de la Pultiere and the southern edge of the Bois des Rappes. The 61st Infantry was placed in and about Cunel, and the 60th Infantry in the Bois de Cunel.¹⁴

On the 16th, at 7.30 a. m., strong combat patrols set forth to reconnoiter the Bois des Rappes. At 10.30 a. m. the first word was received that on the 15th our troops had gained the north edge and were still holding it. At 11 a. m. the commander of the 9th Infantry Brigade asked whether, in view of orders given on the previous day to hold the northern edge of the Bois de la Pultiere

as the line of observation, troops of that brigade at the north edge of the Bois des Rappes should be withdrawn. Instructions were given to hold the northern edge of the Bois des Rappes by all means. In the meantime, however, the troops had reached the north edge of the Bois des Rappes, had returned to the north edge of the Bois de la Pultiere, pursuant to an order given the previous evening which they had received instead of a countermanded order later issued and which they had not received. During the afternoon orders were issued for the relief of the 9th Infantry Brigade in the Bois de la Pultiere by the 10th Infantry Brigade. The lateness of the hour and the impossibility of making the relief when there would be no definite line resulted in the decision not to attempt a reconquest of the Bois des Rappes at that time. Remnants of the 61st Infantry were directed to hold what they had until relieved by the 10th Infantry Brigade.¹⁴

On the night of October 16-17 the 9th Infantry Brigade was relieved by the 10th Infantry Brigade, which extended its line to the right, covering the entire divisional sector front, the 11th Infantry taking the sector previously occupied by the 9th Infantry Brigade. The 9th Infantry Brigade returned to the Nantillois—Montfaucon area to reorganize its units and the area for defense.¹⁴

On October 17 the Bois de la Pultiere was cleared of the enemy, and the division advanced to its northern edge; contact was established with the 3d Division on the right, and the defensive position was entrenched and wired.¹⁵

On October 20 the attack was made on the Bois des Rappes. Despite the fact that the troops were exhausted and arrangements for the attack were made in haste, about 200 meters (218 yards) were gained. Again, on October 21, an attack was made on the Bois des Rappes. This attack succeeded in completely capturing the woods. That night the position was consolidated, and the combat troops were partially wired in.¹⁴

On October 22 the 10th Infantry Brigade, having been relieved the previous night by the 90th Division, withdrew to the zone east of Montfaucon. The 9th Infantry Brigade was then in the Bois Malancourt.¹⁴

During the period October 23-26 the division continued in the areas mentioned. The troops were in bivouac, still under shell fire, mostly from east of the Meuse, and were subject to airplane bombing and shelling at night.¹⁵

On the night of October 26-27 the division relieved the 3d Division in line. The front line at that time extended from the northeast corner of the Bois des Rappes, along the northeast edge of Clairs Les Chenes, Hill 299, and the northern and eastern edges of the Bois de Foret. The 9th Infantry Brigade held the north front of the 61st Infantry on the left and the 60th Infantry on the right. The 10th Infantry Brigade was to the right rear, holding as its front the northern edges of the Fond de la Cote Lemont, Cote 280, and Bois de Briulles.¹⁴

On October 28 a system of small but persistent advances, at slight cost, was instituted, which steadily encroached upon the enemy and ultimately gained a starting point for the next major operation. On October 29, by means of strong combat patrols, the division advanced its outpost line to

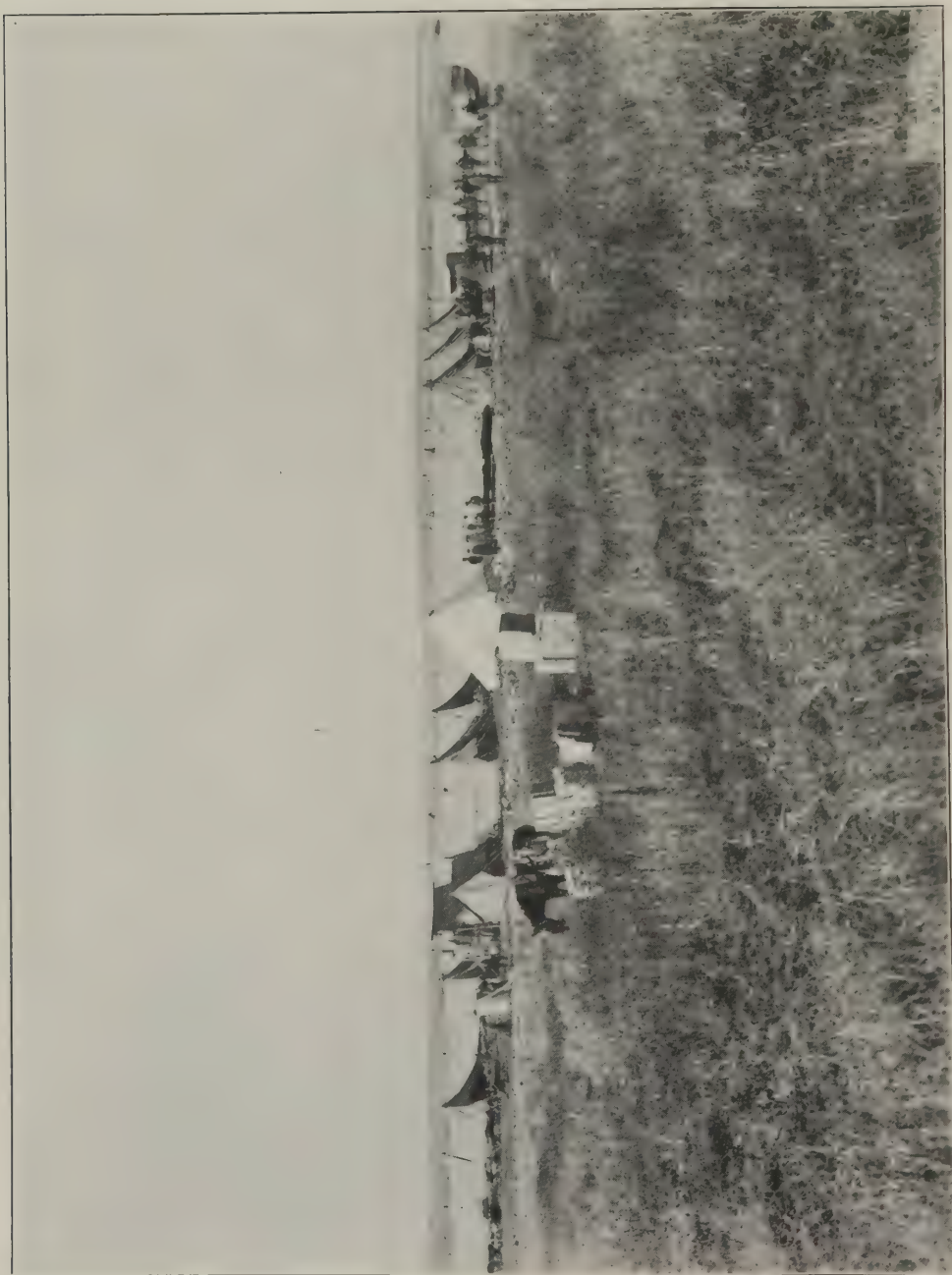


FIG. 81.—Field Hospitals No. 25 and No. 29, 5th Division, consolidated at Bethincourt, October 22, 1918

within 400 meters (436 yards) south of Andon Creek and extended outposts and listening posts well down toward the western bank of the Meuse. On October 30, Brieuilles was cleared of any enemy, and on the 31st Andon Creek was forded and Aincreville was taken.¹⁴

MEDICAL DEPARTMENT ACTIVITIES

It was only with considerable difficulty that ambulance companies maintained contact with regimental and battalion medical formations so they might effect removal of the wounded by litter bearers or, in some cases, by ambulances. Dressing stations were operated at Septsarges and Nantillois, the capacity of that at Nantillois being greatly increased on October 15, when Field Hospital No. 17 opened at that point.¹⁵ Other such stations were established at such times as the military situation in this phase of the operation warranted, at Cunel, Madeleine Ferme, and Aincreville. The stations at Nantillois and Madeleine Ferme were in use during the entire period of the division's operations during this phase.¹⁶ An important service of the dressing station was the provision of hot food, for many men who had become exhausted were able, after eating and enjoying a short rest, to return to the front. One station reported having served over 3,000 hot meals in 48 hours. From these stations ambulances were sent forward as required to regimental aid stations and to other localities. Casualties from the front lines were removed by division ambulances, while from the field hospitals at Bethincourt they were removed both by ambulances and trucks.¹⁷

For the shelter and care of patients awaiting transfer to the triage, Field Hospital No. 17 was used as a collecting hospital in advance areas in connection with dressing stations. It served in this manner from October 15 to 21 at Nantillois, and at Septsarges from October 27 to November 4. At times it was operated in two or more sections, furnishing personnel and tentage to several dressing stations.¹⁸

Field Hospital No. 25 operated the divisional triage at Bethincourt from October 12 to 22, when it closed for three days while the division was not in action. It reopened at this site on October 25 and continued to perform this service until November 5. Similarly, Field Hospital No. 29 operated as a gas hospital at Bethincourt from October 12 to 22 and from October 25 to November 5.¹⁸

Field Hospital No. 30 opened on October 11 at Sivry-la-Perche, where it operated a relay hospital until November 1. Such a formation was necessitated by the length of the route to evacuation hospitals and the time required to travel it. This unit also received sick and exhausted which were sent to it directly from the triage.¹⁸

For a short time the different divisions of the corps alternated in maintaining a corps gas hospital, but this arrangement did not prove very satisfactory. There were enough gas casualties in each division to keep one of its hospitals fully occupied, and the attempt to treat at one field hospital of one division all the gassed cases of the corps resulted in confusion both

in respect to patients and to their records. After this became apparent the 5th Division operated its own gas hospital.¹⁹

This division, like all others in the Third Corps, was provided with operating teams, but as there were comparatively few wounded requiring operation in the field hospitals at Bethincourt, one team at a time was sufficient for the needs of the corps at this point. Rotation was therefore practiced by the teams belonging to the three divisions in the corps, and constant attention to patients was thus made feasible. The surgical work of the field hospitals was limited by the fact that a mobile hospital was readily accessible to the wounded of the corps, first at Fromereville and later at Esnes. Some of the shock teams organized in the divisions gave preoperative and post-operative treatment in the field hospital where surgery was performed, while others at other field hospitals restored such patients as had been chilled while en route.²⁰

Under supervision of the corps regulating officer the evacuation service from the field hospitals at Bethincourt was effected by French and American ambulance sections (especially by Sections No. 566 and No. 571) and by trucks which passed this point on their way to the rear.²¹ Trucks were used for the slightly wounded and the sick; they carried approximately 50 per cent of the patients evacuated. The routes of evacuation from divisional hospitals remained as at the beginning of the attack until November 8, casualties going to the triage at Bethincourt and thence as follows: Seriously wounded to Mobile Hospital No. 1, at Fromereville, and to Mobile Hospital No. 5, at Les Placys, respectively 20 and 26 km. (12.4 and 16 miles) from the front; transportable wounded and sick to Evacuation Hospitals No. 6 and No. 7, at Souilly, 34 km. (21 miles) from the front; and gassed psycho-neurotic patients to Evacuation Hospital No. 3 and the neurological unit at Benoitte Vaux, 30 km. (18.6 miles) from the front. The distance to these hospitals gradually increased and the difficulties of evacuation became progressively greater, but at this time the army hospitals could not be advanced, as there were no railway facilities for their evacuation farther forward.²²

Medical supply dumps were established at Bethincourt and at Septsarges.

*Triage reports 5th Division*²²

[Admissions from 5th Division only]

	Wounded	Psychoses	Gassed	Injured	Sick
Oct. 13.....	196	0	38	2	5
14.....	144	2	59	8	22
15.....	366	78	120	19	54
16.....	1,064	18	80	12	70
17.....	321	2	46	3	61
18.....	198	0	18	1	24
19.....	184	1	12	2	57
20.....	255	0	1	2	52
21.....	131	0	5	2	33
22.....	237	3	2	2	32
23.....	40	0	0	1	12
27.....	12	0	0	30	5
28.....	14	0	9	55	5
29.....	38	0	2	53	4
30.....	34	0	1	40	1
31.....	32	0	3	40	2

THE 90TH DIVISION

On October 17 the 90th Division passed to the reserve of the Third Corps, and on the night of October 21–22 it relieved the 5th Division, remaining in the attacking line until the armistice, November 11.²³

On October 22, the division was ordered to insure its position in the Bois des Rappes and to push out strong patrols to take possession of Bantheville and the high ground north and northwest of that town, and to establish a line from the northwest corner of the Bois des Rappes, over the high ground north of Bourrut, to the northeast corner of the Bois de Bantheville.²³

On October 23, the 357th Infantry attacked at 3 p. m., and took all objectives, with only slight casualties. The 3d Battalion, 358th Infantry, in the Bois des Rappes, extended its left to connect with the 357th Infantry, north of Bourrut.²³

On the night of October 23, it was reported by the Third Corps that indications pointed to a withdrawal of the enemy. The 179th Infantry was ordered to gain and keep contact with him. Pursuant to these instructions, a portion of the 358th Infantry crossed the Brook Andon. A position was then held from a point about 500 meters (545 yards) southwest of Aincreville along the Aincreville—Bantheville road, to the north of Bourrut, thence along Hill 270 to the western boundary of the division. The establishment of this line, gave an excellent position for the attack of November 1, and it was held despite continuous, severe shelling and severe, small counterattacks.²³

The 179th Brigade was relieved in line by the 180th Brigade on the night of October 30–31.²³

MEDICAL DEPARTMENT ACTIVITIES

The office of the division surgeon moved on October 19 to Cuisy, the division post control, but his subordinate office personnel was soon sent to Sivry-la-Perche, in the rear. On the same date the division surgeon issued an order concerning evacuation routes, disposition of medical department formations, and other cognate matters. In the attack of October 23 the units of the sanitary train were disposed and operated as follows:²⁴ On October 22 Ambulance Companies No. 357 and No. 359 had established the main dressing station of the division at Nantillois. Ambulance Company No. 358 established a dressing station at Septsarges and furnished details to regimental detachments. Ambulance Company No. 360, in conjunction with Field Hospital No. 357, had established a triage at Bethincourt on October 19.²⁵ Field Hospital No. 358, at Bethincourt, was the corps gas hospital, while Field Hospital No. 359 received corps sick and slightly wounded, at Sivry-la-Perche.²⁶ Field Hospital No. 360, the divisional collecting hospital, was located 0.5 km. (0.3 mile) south of Nantillois.²⁷ All motor ambulances (38 in number) were pooled and operated from Nantillois under the direction of Ambulance Company No. 359. At Bethincourt were located the triages of the three divisions attacking on the corps front. Here also was one hospital from each division, designated to receive a certain class of patients from all divisions in the corps.

Under this arrangement the hospital of the 90th Division (Field Hospital No. 358), designated for communal service of the corps, was at first in reserve at this point, but was soon called upon to supplement the gas hospital, operated for the corps by the 5th Division. At the same place a field hospital of the 3d Division received all nontransportable wounded in the corps. The supply dump of the 90th Division was located at Sivry-la-Perche.²⁴

Division consultants and chaplains were assigned to duty at the triage, which was augmented further by personnel of Ambulance Company No. 360,



FIG. 82.—Aid station, 358th Infantry, at Cunel, Meuse, October 27, 1918

to operate it at night. The commanding officer of the sanitary train was ordered to make any other assignments to this formation necessary for its efficient service.²⁴

Though the medical supply dump was ordered to remain at Sivry-la-Perche, an advance dump was established at the triage, whence supplies could be sent by ambulance on request of medical officers farther forward.²⁵

A medical officer was designated to control evacuations from the front to the field hospitals, while another, under the corps surgeon, was charged with evacuations from the hospitals to the rear. It was directed that divisional officers make arrangements concerning evacuations either with him di-

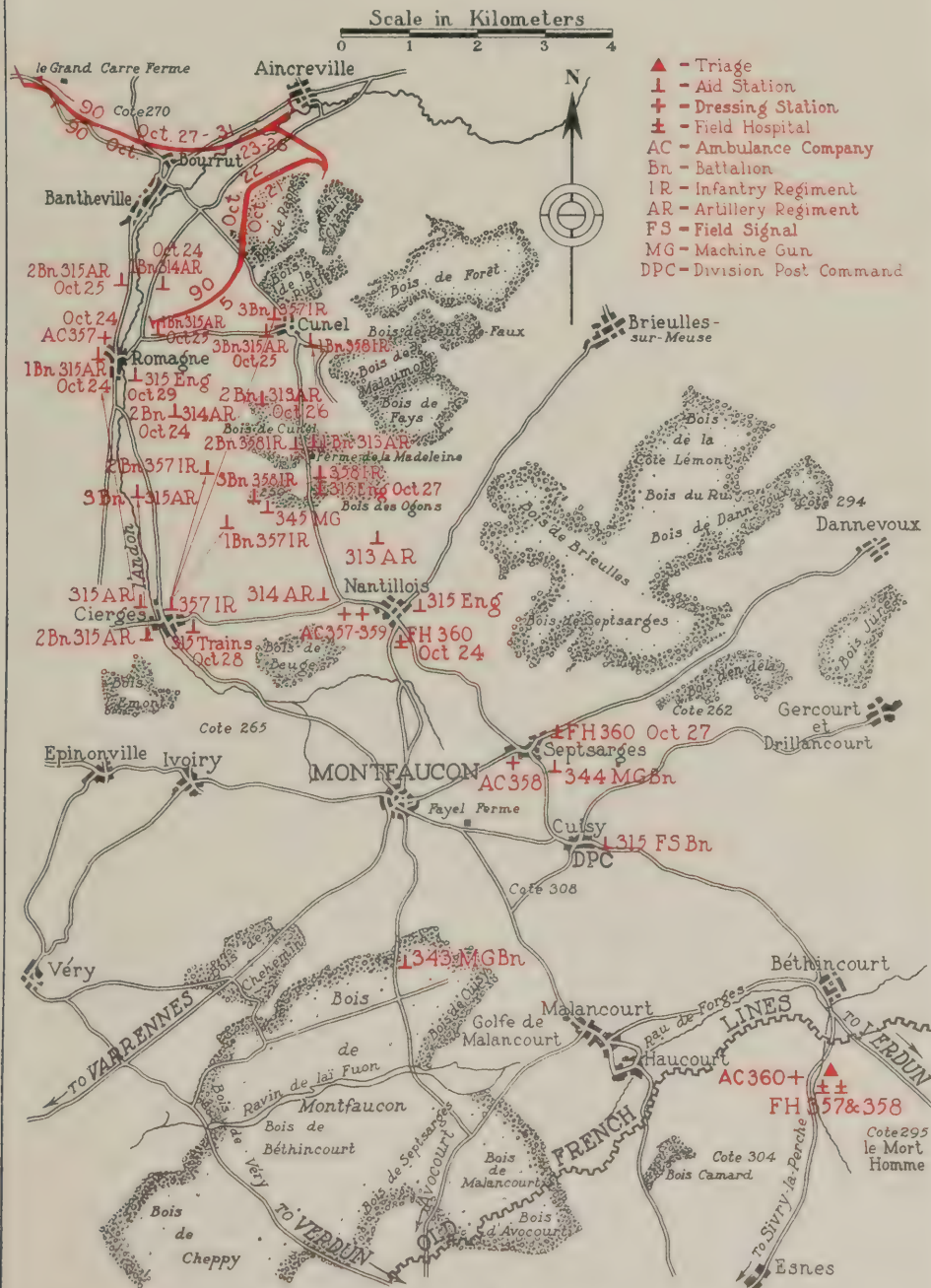
MEUSE - ARGONNE

2ND PHASE

90TH DIVISION

SHOWING AID STATIONS

OCTOBER 21-31, 1918.



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

rect or with the corps surgeon by telephone or by courier. Wounded were distributed from the division units as follows:²⁴

Seriously wounded: Evacuation Hospital No. 8, Petit Maujouy, and Mobile Hospital No. 5, Les Placys.

Slightly wounded:

Ambulance cases—Evacuation Hospital No. 4, Fontaine Routon.

Truck cases—Evacuation Hospitals No. 6 and No. 7, at Souilly.

Gassed cases: Gas Hospital, La Morlette.

Nervous cases: Psychopathic Hospital No. 1, Benoite-Vaux.

Contagious cases: French hospital, Benoite-Vaux.

Normal sick (in trucks if practicable): Evacuation Hospitals No. 6 and No. 7, Souilly.

On October 24, Ambulance Company No. 357 established an advance dressing station which included facilities for the treatment of gassed patients. This was at Romagne, where it operated until November 4.²⁷

On the 27th an advance rest hospital was established at Septsarges where walking patients and those with minor injuries were received and forwarded to the triage by truck.²⁷

Cases received at the triage were reported to have been as follows:²⁹

To 6 a. m.—	Wounded	Gassed	Sick and injured	Total
Oct. 23.....	22	5	27	54
24.....	62	58	42	162
25.....	139	40	34	213
26.....	58	42	43	143
27.....	57	66	59	182
28.....	32	16	74	122
29.....	14	13	48	75
30.....	31	13	41	85
31.....	26	44	68	138
	441	297	436	1,174

The greatest number received on any one day was 213, but the average was 130.4 per day. Of the 297 gassed cases, none proved fatal.²⁹

In addition to the above, 838 cases belonging to other divisions were admitted during this period, making a true total of 2,012.²⁹

THE 3D DIVISION^c

On October 14 the 3d Division attacked at 8.30 a. m. Its mission was to hold that part of its line through which the 5th Division had passed, from the Cierges—Romagne road to within 1 km. (0.6 mile) of the Meuse, and to advance to the army first phase objective on the right.³⁰ The 30th Infantry was assigned the special task of clearing the Bois de la Pultiere and the Bois des Rappes, in cooperation with the 5th Division, which was attacking these woods from the southwest. The attack developed slowly, meeting with stubborn resistance; and night found the division in possession of the Bois de la Pultiere, and with its line well advanced into the Bois de Foret.³⁰

^c For map of activities of this division for this period, see Plate XI.

On October 15 at 7.30 a. m. the attack was continued, but except for a general local improvement of the lines no advance was made.³⁰

On October 17 the division occupied the front line, approximately as follows: East edge of the Bois de la Pultiere, thence southeastwardly along the border of the Bois de Peut-de-Faux, to a point on the Cunel—Brieulles road west of Brieulles.³⁰

On October 20, at 7 a. m. the 3d Division attacked in close cooperation with the 5th Division, the mission of the 3d Division being to clear and hold the Bois des Clairs Chenes and Hill 299. At 2.30 p. m. the Bois des Clairs Chenes had been completely cleared of the enemy. However, a counterattack by the enemy drove the elements holding the front line back to the point of departure at the northern boundary of the Bois de la Pultiere. At 6 p. m. the 7th Infantry counterattacked and gained Bois des Clairs Chenes.³⁰

Hills 297 and 299 were attacked at noon, October 21. At 2.30 p. m. these hills were occupied.³⁰

At 1.45 p. m. October 22 the whole of the Bois de Foret was held by our troops, and that night Hill 281 was gained.³⁰

On October 23 the 3d Division, in cooperation with the 90th Division, which had relieved the 5th Division on October 21-22 on the left bank of the 3d Division, made a successful attempt and captured Bantheville.³⁰

During the days of October 24-25, the troops of the 3d Division remained in position, reorganizing positions which were unobservable by the enemy. On October 25, orders were received from the Third Corps for the relief of the 3d Division by the 5th Division, to be effected on the night of October 26-27. The 3d Division then passed into the corps reserve.³⁰

MEDICAL DEPARTMENT ACTIVITIES

Battalion aid stations with troops were frequently under fire, though located, if possible, at points giving some protection. By order of the regimental commander, one such station of the 7th Infantry was located in the trenches (October 21), but casualties were so great that it had to be withdrawn to Cunel. Some protection was obtainable in a quarry 1 km. (0.6 mile) east of that town, and the aid stations of two regiments were located there. Such good shelter as this was not usually to be found. Whenever possible, both regimental infirmaries and battalion aid stations were placed near a road—for example, those at Madeleine Ferme, Nantillois, Cunel, Cierges, etc.—in order that they might be accessible to ambulances and thus reduce carriage by litter. Exhaustion of litter carriers rendered very difficult the bringing in of the wounded from the front, though German prisoners were used and some voluntary details of line troops were made available.³¹ The aid station of one regiment sometimes worked in conjunction with that of another. Thus, at Madeleine Ferme, where the 30th Infantry maintained a consolidated station for the entire regiment, caring for some 800 cases, there were at one time, working in conjunction with it, aid stations of the 4th and 7th Regiments, and at other times those of the 38th, 60th, and 61st Regiments and of the 8th Machine Gun Battalion. Such combinations were occasioned

by the narrowness of the divisional sector and the scarcity of desirable locations for aid stations.³² Psychoneurotic cases received at these stations were small in numbers in comparison with those in the battle of the Marne. Also the percentage of seriously wounded was higher than in that engagement, more casualties being the result of high explosive shells. Rest and food provided at aid stations enabled many exhausted men to return to the front, but the resources were not sufficient for the refreshment of all. In one regiment (the 4th Infantry) 70 per cent of the men evacuated during the last five days of this action had become incapacitated because of extreme exhaustion. To clear the aid stations, ambulances came forward as lulls in the firing or darkness permitted, and many patients were sent from them on returning trucks.³³

SANITARY TRAIN

Ambulance Company No. 7, with station at Montfaucon, was engaged in removing wounded from the front until withdrawn October 31, 1918.³⁴ Ambulance Company No. 5 established a station in the vicinity of Septsarges on October 19, with its vehicles in operation between the front and the field hospitals. While there it cared for 851 patients, of whom approximately 250 came from other divisions. In the period October 1-31, the company evacuated 3,295 casualties, of which 2,488 were members of the 3d Division.³⁵

Ambulance Company No. 27 operated the dressing station at Montfaucon from October 15-31, and its ambulances removed patients from that point to the rear. After taking over this station it evacuated its patients to Bethincourt, for when the 3d Division was transferred to the Third Corps its field hospitals were moved to that location (October 14-15) in order that they might be placed on the axial road of the corps in which the division was then operating. During the time the station at Montfaucon was open, October 31, its personnel consisted of alternating day and night shifts of 2 medical officers, 2 noncommissioned officers, and 21 other enlisted men.³⁶ Ambulance Company No. 26 conducted a shock ward in conjunction with the dressing station at Montfaucon, and throughout the entire period furnished bearer details to the Infantry, Machine Gun Battalions, and to the dressing station at Montfaucon, at the time also evacuating 66 patients to the field hospitals in Bethincourt.³⁶

Headquarters of the field hospital section arrived at Bethincourt on October 14-15, functioning there until the 31st.³⁷

Field Hospital No. 5 assisted Field Hospital No. 27 at Bethincourt in caring for sick and gassed patients and also in triage service. Here it admitted 77 sick and gassed cases. On October 25 it moved to Bethelainville, and there cared for sick until the 28th, moving then to Sivry-la-Perche.³⁷

Field Hospital No. 7 cooperated with Field Hospital No. 26 at Bethincourt in road construction and in the care of shocked and nontransportable cases. After October 19, on which date Field Hospital No. 26 was moved, Field Hospital No. 7 cared for all nontransportable cases here (admitting a total of 148), until October 28, when it withdrew to Sivry-la-Perche.³⁷

Field Hospital No. 26 conducted a shock hospital at Bethincourt until the 19th, when it moved to Septsarges. At this point Ambulance Companies

No. 5 and No. 7 were engaged in removing casualties from battalion aid station, and here Field Hospital No. 26 gave them food and treatment, evacuating to the triage at Bethincourt those needing further care.³⁸ After suffering six casualties from shell fire at this place, it moved about 200 meters (218 yards) north, where it remained until October 28, then moving to Sivry-la-Perche. In the interval, October 19-27, the shock and rest station which it had operated at Septsarges evacuated 616 patients. During the month it had cared for 1,259 patients and suffered 12 battle casualties.³⁸

Field Hospital No. 27, assisted by Field Hospital No. 5, opened on the 17th at Bethincourt as the divisional triage. There it received 2,344 patients, including gassed, among whom there were three deaths. Of the cases received here larger numbers were due to illness than to battle casualties. On the 27th the hospital closed and went into reserve until the 30th.³⁹

During the period October 15-30, sickness caused considerable loss to the division, more cases of disease than wounds being received at the triage. This was due largely to the influenza epidemic, but diarrhea also caused a large number of temporary disabilities.³⁹

The following pertinent report concerning orthopedic service is quoted from the Medical Department report of the Third Division:⁴⁰

The aim of the orthopedic section was to have every casualty involving injury to the bones or joints properly splinted at the earliest possible moment after injury, thus avoiding a great amount of unnecessary pain to the patient and unnecessary damage to the soft parts at the site of the injury. Instruction of the Medical Department enlisted personnel on the proper application of various types of splints, especially the Thomas arm and leg splints, and first aid treatment of fractures was encouraged.

During activity, the orthopedist operated from either the main ambulance dressing station or the triage hospital. During the last offensive, until the 16th of October, all fractures were examined at the main ambulance dressing station at Montfaucon. It was made certain that these cases were properly splinted, that there was no frank hemorrhage, that the patient was as comfortable as possible under the circumstances, and that antitetanic serum had been administered. Injuries to bones and joints were found to cause a surprisingly large percentage of all battle casualties. The main dressing station was operated by Ambulance Company No. 7; later on by Ambulance Company No. 27. Here patients could usually find a warm fire, hot coffee, food, and cigarettes before being evacuated to the field hospitals.

It was found that all cases of fracture did not go through this station. Fractures were subsequently treated from October 16 to November 1 at the triage hospital at Bethincourt, operated by Field Hospital No. 28, and promptly evacuated to the evacuation hospitals.

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CHAPTER XXVIII

SECOND PHASE—Continued

OPERATIONS EAST OF THE MEUSE ^a

Hitherto the discussion of the activities of the division of the First Army in the Meuse-Argonne operations has been confined to the area west of the Meuse. This was because, there, active operations took place earlier; whereas on the east, until October 8, a stationary line was maintained.

In the discussion of the activities of the First Army, in Chapter XX, during what has been considered herein as the first phase of the Meuse-Argonne operation, mention was made of the fact that it was primarily intended to limit the front of the American attack to the west of the Meuse, and that the three corps of the First Army located there were to advance to the north and east, keeping in liaison with the French on the left, and using the Third Corps of the First Army as a pivot to establish a line of defense on the Meuse. In carrying out this mission, the forces of the First Army on the right of the Meuse then were concerned only with protecting the right of the attack.

In advance, however, when our troops had pushed farther north than Montfaucon, the enemy artillery fire from the heights east of the Meuse became so effective as to force their being cleared.¹ Accordingly, on September 30, Marshal Foch directed that the attack be extended east of the Meuse.²

The attack east of the Meuse was opened on October 8, by the French Seventeenth Corps.³ The American troops participating in this attack were the following: From west to east, the 33d Division, which was west of the Meuse but put elements across the river during the day; the 58th Infantry Brigade of the 29th Division, attached to the French 18th Division. Later, the remainder of the 29th Division and the 26th Division were added to the forces east of the Meuse.^{4, 5}

The military activities of the First Army during both the first and second phases, east of the Meuse, have been given in connection with the activities on the west thereof.

^a General remarks concerning military operations as a whole have been abstracted from Major Operations, American Expeditionary Forces in France, prepared in the Historical Section, the Army War College.

^b During the period October 16 to November 5 the 35th Division held the Sommedieue sector, near Verdun, being the right-flank division of the First Army. No orders were received for an advance by this division, and its only activity consisted in sending out strong patrols in order to secure information of any possible withdrawal by the enemy. While in this sector the division was attached successively to the French Thirty-third, Seventeenth, and Second Colonial Corps.⁵

MEDICAL DEPARTMENT ACTIVITIES

As no orders were issued for the evacuation service of the American troops as a whole engaged in the operation east of the Meuse, the work of the Medical Department of the several divisions concerned will be discussed individually in connection with the operations of these divisions.

THE 33D DIVISION^c

On October 6, the 33d Division was placed at the tactical disposal of the French Seventeenth Corps, and was ordered to participate in the attack of that corps east of the Meuse. Two days later, when this attack began, the Engineer regiments of this division constructed two bridges across the river, one at Brabant-sur-Meuse, the other at Consenvoye, despite the fact that these bridges were under direct enemy observation and shell fire. Three battalions of Infantry and two machine-gun companies then crossed the river on these bridges, formed the left of the French attack, and by nightfall had reached their objective south of Bois de Chaume. The next day these units continued their advance to the road running from Sivry-sur-Meuse to Ville-neuve Farm, but in the evening of that day a powerful enemy attack against the right flank forced them to return to Tranchee du Cable, just south of Bois de Chaume. Reinforcements had been dispatched from the main body of the division across the river, and by the attack of October 10 all lost ground was regained. During the next four days, these troops, whose right flank remained exposed, were subjected to heavy artillery and machine-gun fire, and to gas and airplane attacks. The 65th Brigade operated in the sector of the divisional front east of the Meuse, and the 66th in the sector west of it, from October 15 until the night of October 20-31, when most of the division was relieved by the French 15th Colonial Infantry Division. Relief was not completed until October 22. The 33d Division had been in the trenches before Verdun for 44 days, and during the period it was astride the Meuse it held a front of approximately 10 km. (6.2 miles), which was subjected to incessant fire from enemy positions on the heights east of the river. When relieved by the French 15th Colonial Infantry Division, the 33d Division proceeded to the Troyon-sur-Meuse sector, where it relieved the 79th Division.^e

MEDICAL DEPARTMENT ACTIVITIES

The divisional operations east of the Meuse and the concurrent tenure of the former position west of it necessitated radical changes in the disposition of Medical Department formations. It was necessary to evacuate from each flank separately, and for this reason dual arrangements had to be made. On the east of the Meuse an ambulance post was located at Consenvoye, a dressing station at Cote des Roches, the triage and a reserve hospital at Glorieux. On the left, ambulance posts were located at Dannevoux and at a point east of Bois de Dannevoux and Bois de Septsarges, a dressing

^c For map of activities of this division for this period, see Plate XLIII.

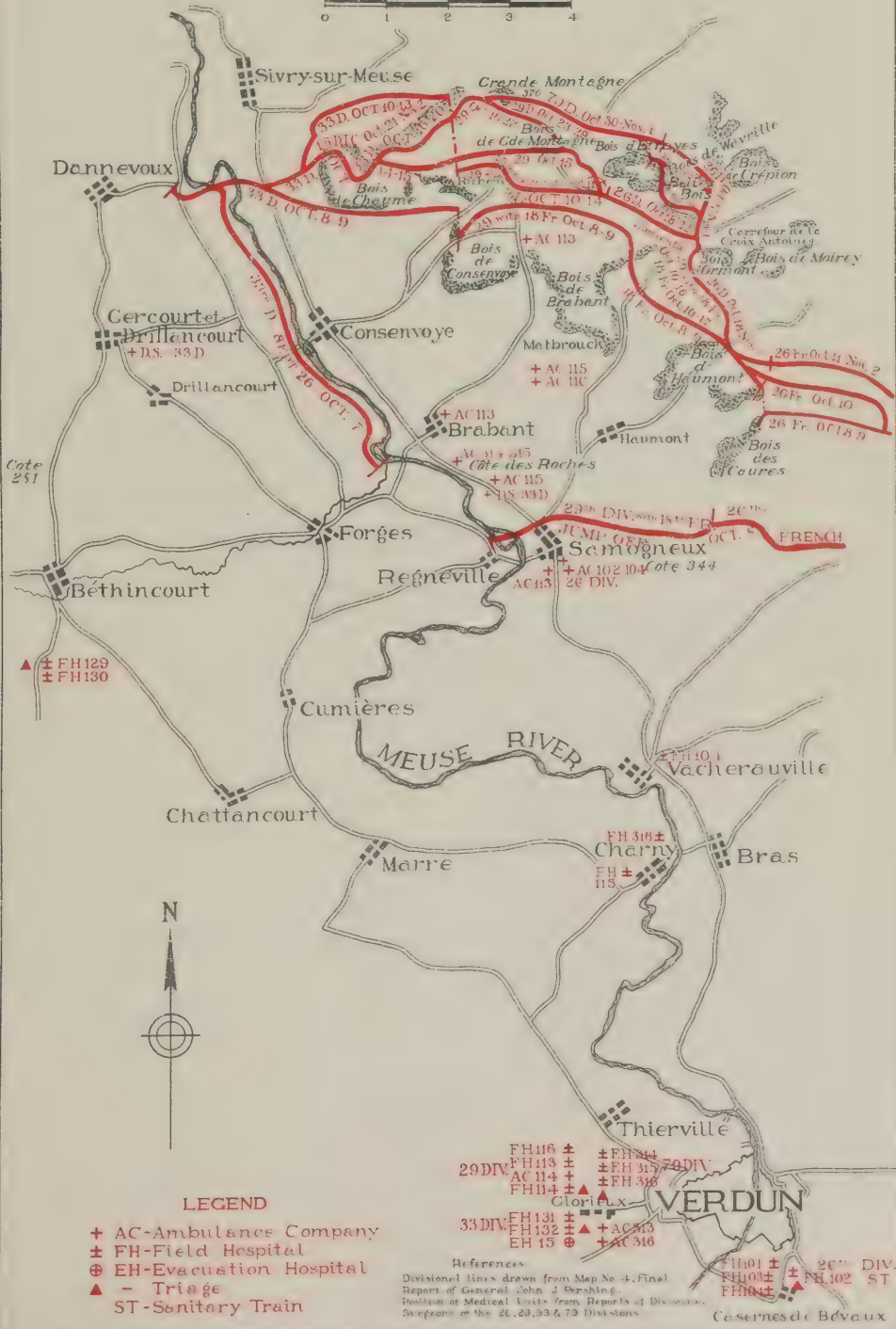
MEUSE - ARGONNE

2nd. PHASE

26, 29, 33 & 79 DIVISIONS

Scale in Kilometers

0 1 2 3 4



station at Gercourt-et-Drillancourt, the divisional triage and a hospital for nontransportable wounded of the corps at Bethincourt. Prior to the attack of October 4, Field Hospital No. 129, which had moved to Bethincourt to receive the divisional sick, was relieved from this duty and was designated as the triage for troops on the left bank of the river. Field Hospital No. 130 at the same point received the nontransportable wounded from the corps, while a hospital belonging to another division then acted as corps gas hospital. At Glorieux, Field Hospital No. 132 was the triage unit for the troops on the right bank, and at the same point Field Hospital No. 131 was held in reserve. On October 16, the 29th Division took over the triage at Glorieux, relieving Field Hospital No. 132: but that unit continued for several days to operate its gas department.⁷ Field Hospital No. 129 continued to act as the triage at Bethincourt until the division was relieved. Field Hospital No. 130 went into reserve on the 17th, moving on the 20th to Charny and then to Genicourt-sur-Meuse, where it opened on the 22d. Field Hospitals No. 129 and No. 132 moved on the 22d to Faubourg Pave, where the remainder of the sanitary train eventually congregated, Field Hospital No. 132 having turned over all gas equipment to the establishment at Glorieux. On October 17, Ambulance Company No. 131 had arrived at Thierville. All units of the ambulance train prepared to leave their stations as soon as the division withdrew from the forward areas and to provide ambulance service for the troops on the march.⁸

By October 21, the division surgeon's office was established at Dieue, on the Meuse, and the 108th Sanitary Train was located at Faubourg Pave, except certain units which were distributed to serve elements of the division.⁸

The physical condition of the troops had become impaired by long exposure and harassing fire and many men were becoming exhausted. A number were suffering from gastroenteritis, but none of the cases were serious and the general health of the division was fairly good.⁸

During its participation in the Meuse-Argonne operation, divisional Medical Department formations cared for 3,639 patients, of whom 1,006 were wounded, 1,625 gassed, 113 injured, 47 psychoneurotics, and 848 sick. Of this number 32 died. It was reported that 60 per cent of the men tagged as suffering from gas were in fact suffering from conditions other than gassing. Evacuations were carried out promptly, though at certain times application of dressings in the forward area had to be effected under the adverse conditions occasioned by heavy enemy fire. A number of casualties were sustained by the personnel of the Medical Department.⁸

THE 29TH DIVISION ^a

Beginning on the night of September 29-30, the 29th Division (less Engineers and Engineer train, which were on duty with the Fifth Army Corps), proceeded to the vicinity of Verdun, where it came under command of the French Seventeenth Corps. The 57th Infantry Brigade was assigned as corps

^a For map of activities of this division for this period, see Plate XLIII.

reserve, but later elements of the brigade were placed in the line to assist the French 18th Division in their attack. The 58th Infantry Brigade was attached to the French 18th Division, and on October 8, with the 18th Division, attacked to the north, from positions on a line just north of Samogneux, against the heights which determined the Meuse-Argonne battlefield.⁹ The attack penetrated Bois de Consenvoye, and two days later, after the 113th Infantry had reinforced the line, the advance was resumed and the wood cleared. On October 11, command of the division sector as far east as the Ravin de Molleville passed to the 29th Division, but certain of its elements continued for some days to operate with the French troops on its right. By October 16, the line had been pushed forward into Bois de la Grande Montagne on the north, and on the east into Bois d'Ormont, by elements of the divisions attached to the French 18th Division. It was necessary to approach this latter position by way of Etrayes ridge and Belieu Bois. On October 23, the ridge was taken, the line now running from Ruisseau de Moyemont to Hill 370, thence along the northern and eastern slopes of Etrayes ridge to a point between Bois de Waville and le Houppy Bois. On October 30 the division was relieved by the 79th, when it moved to the Vavincourt area.^{9, 10, 11}

MEDICAL DEPARTMENT ACTIVITIES

The general plan for caring for wounded was reduced to the simplest terms possible. Battalion surgeons, with their detachments, accompanied advancing troops and established their stations as near the front as shelter of any kind permitted. Each regimental surgeon kept about five enlisted men in reserve to be used for messenger service or to reinforce any overtaxed station. Battalion medical equipment was carried as far forward as possible by carts and then by the Medical Department personnel.¹²

On October 7, the sanitary train was disposed as follows: Headquarters of the train and of its sections with the four ambulance companies and Sanitary Squads No. 41 and No. 42 were at Glorieux, a suburb of Verdun; Field Hospital No. 114 had opened the divisional triage in a French military hospital in the same community, and the other field hospitals were at Rampont. At 6 a. m. October 8, Ambulance Companies No. 113 and No. 115 moved to Charny, where they established ambulance parks, kitchens, and motor repair shops. Shortly after 8 a. m. Ambulance Company No. 113 established a dressing station near Samogneux with a part of its ambulance section and sent forward litter bearers, who soon gained contact with the line. As this point was under intermittent shell fire, the ambulances serving it were kept on the alert at Charny, one moving up whenever another passed to the rear.¹² On the same date (October 8) Ambulance Company No. 115 located a dressing station in a quarry midway between Samogneux and Brabant. The following morning Ambulance Company No. 113 moved from Samogneux to a quarry beyond it, but the same day moved farther forward to a site in Bois de Consenvoye, where it remained until the division withdrew from the line. This company also maintained a small dressing station in Brabant to care for

any casualties occurring in that place or in its vicinity. October 10, Ambulance Company No. 116 established a station 3 km. (1.8 miles) north of Samogneux, and here Ambulance Company No. 115 also located its station the next day. Though frequently under heavy shell fire, these stations retained this location until October 19.¹³

During this period Ambulance Company No. 114 (animal drawn) had been in reserve at Glorieux, furnishing details for various purposes. Thus at the request of the surgeon of the French Seventeenth Corps it assigned 4 noncommissioned officers and 30 litter bearers to assist the evacuation of the French 18th Division on the nights of October 10 and 12. Another detail assisted at the triage. The vehicles of this company were used only for some short hauls over rough roads near the front, and to clear the slightly wounded from a station which the company had established for this class of casualties at Charny. This station functioned from the 11th to the 29th.¹³

As the number of casualties had decreased by October 19, Ambulance Company No. 116 closed its station and returned to Glorieux, and Ambulance Company No. 115 returned to the quarry on the Samogneux—Brabant road, where it continued to operate a station until relieved by a formation of the 79th Division, on October 29. Evacuation from the front to the triage was made by the vehicles of Ambulance Companies No. 113 and No. 115, which for three weeks were kept moving over roads which at places were almost impassable. At times it was necessary to supplement them by trucks. The motor section of Ambulance Company No. 116 was assigned to corps service and assisted in moving patients from the triage to the evacuation hospitals.¹⁴

The triage at Glorieux was operated by Field Hospital No. 114, in conjunction with a detachment from the sanitary train of the 33d Division, but the latter was relieved shortly after the 29th Division began its offensive. At this triage patients were received, recorded, classified, and prepared for disposition and distribution. It was divided into departments for reception, record, care of severely and slightly wounded and gassed, and for evacuation. The only patients it retained were the nontransportables. Reinforced by details from other elements of the sanitary train, it admitted 5,660 patients in the interval October 8–29, of whom 4,865 came from the 29th Division, the remainder from the American 26th, 33d, and 80th and the French 18th.¹⁴

At the triage, patients received hot food, their dressings were reapplied or readjusted, and delicacies, obtained through the Red Cross, were distributed. At Charny, Field Hospital No. 115 cared for the slightly gassed and slightly sick (October 12–27), returning nearly 200 patients to duty. Field Hospital No. 113, on the arrival of Evacuation Hospital No. 15 at Glorieux, moved to Charny to care for gassed cases there if need be; but as the division was permitted to continue the use of the gas hospital belonging to the French at Glorieux, such a need did not develop, and the hospital returned on the 27th without having functioned.

Supplies were replenished as required from the army depot at Souilly, whence everything needed by the medical department was readily obtained.¹⁴

THE 26TH DIVISION *

On the night of October 17-18, the 26th Division completed the relief of the French 18th Division, in a sector north of Verdun. The line taken over extended 5 km. (3.01 miles), from the Ravin de Molleville, past the Ravin de la Reine, to the eastern edge of Bois de Haumont, with the 52d Brigade on the right and the 51st on the left. The left was to protect the exposed flank of the 51st Brigade.¹⁵



FIG. 83.—Dressing station operated by Ambulance Company No. 102, 26th Division, near Samogneux, Meuse, October 23, 1918

The attack began at 6.15 a. m. October 23, the 51st Brigade advancing northeastwardly in the direction of Hill 261, capturing Belieu Bois, and reaching the heights of Hill 301 and Hill 346; but on account of tremendous fire from La Grande Montagne and heights on the right, the troops could not hold the woods. At night the line occupied was along the eastern edge of Bois d'Etrayes, thence to a point in the edge of Bois d'Ormont, and thence along the former front.¹⁵

On October 24 an attempt to recover Belieu Bois was made at 3 p. m., but little ground was gained. On the next day, attempts were again made, but without success, although losses were heavy.¹⁵

* For map of activities of this division for this period, see Plate XLIII.

On October 27 further attack was made, for the purpose of recapturing Belieu Bois, the Bois d'Ormont, the Carrefour de la Croix Antoine, and the western angle of Bois de Moirey. Belieu Bois was cleared to its eastern border, but Bois d'Ormont resisted all efforts. This attack was the last made by the 26th Division in the second phase of the operation. On October 30, its left brigade was relieved by the 79th Division and was shifted to the right of the former right brigade, in what was known as the Neptune sector. There the division operated in the final phase of the Meuse-Argonne operation, beginning November 1.^{15, 16}

MEDICAL DEPARTMENT ACTIVITIES

On the left, near Samogneux, Ambulance Company No. 104 established a dressing station for which it utilized tentage. In the absence of other protection its personnel dug individual shelters to shield themselves against intermittent shell fire. Ambulance heads were located, one at Haumont, 5 km. (3.1 miles) beyond the dressing station and another at a point farther forward in a locality known as Death Valley. As the dressing station mentioned above proved inadequate, Ambulance Company No. 102 established another, larger than the former, 0.5 km. (0.3 mile) to the rear of it at a point where shelter was available. The smaller station was then closed and held in reserve. At Vacherauville, a detachment of Field Hospital No. 104 established a station for walking wounded.¹⁷

All the field hospitals were located at Casernes de Bevaux, where Field Hospital No. 102 conducted the triage, Field Hospital No. 101 cared for the sick, Field Hospital No. 104 for the gassed, and Field Hospital No. 103 was in reserve.¹⁷

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CHAPTER XXIX

THIRD PHASE

ARMY OPERATIONS ^a

On November 1, at 5.30 a. m., the advance began on a front of 51 km. (31.6 miles), preceded by two hours' artillery preparation. The first objective was to secure control of Buzancy and the heights east; the next, to clear the Bois de Bourgogne. The Third and Fifth Corps carried their attack to Barri-court Ridge, breaking through the enemy's defensive system and artillery lines; by night they were on the general line from Aincreville to the northern edge of Bois de Barricourt, and through the Bois de la Folie. The right of the First Corps advanced with them, but the left made little progress. The French Fourth Army gained a firm footing on the high ground north and east of the Aisne. The attacks were continued on the succeeding days. The Third Corps drove the enemy across the Meuse and held the west bank down to Villefranche. The Fifth Corps connected, its right division, the 89th across the Baucclair—Nouart road facing northeast, while its left division, the 2d, had pushed its 3d Brigade boldly through the woods nearly to Beaumont. The First Corps drove the enemy north along the east bank of the Bar River, its right connecting with the Fifth Corps, and reached Chatillon-sur-Bar with its left. By November 4 the Germans were in retreat on the entire front, withdrawing behind the Meuse.

Between the Meuse and the Chiers, north and northeast of Stenay, there was a strong position covering the crossing in that vicinity. By crossing south of Stenay and advancing toward Montmedy, this position could be flanked. The heights of Villers-devant-Dun, captured November 2, formed a good position for the artillery necessary to cover this crossing.

The commanding general of the First Army ordered a vigorous pursuit. By active patrolling and deep raids the French 17th Corps was to obtain prompt information of the hostile movements and follow up any withdrawal from the heights. The Third Corps was to establish a bridgehead east of the Meuse in the vicinity of Liny and Dun-sur-Meuse. The First and Fifth Corps were to push the pursuit toward Raucourt and Beaumont, respectively.

To carry out its mission, the Third Corps ordered the 5th Division to cross the Meuse and secure a bridgehead on the general line Lion-devant-Dun—Murvaux—Fontaines, to cover the crossing of the 32d Division. The 90th Division was to hold the bulk of its forces on the western heights below Dun, assisting the 5th Division with its artillery. The 32d Division, which was now in corps reserve, was assembled south of Aincreville, prepared to cross the Meuse near Dun-sur-Meuse.

^a Abstracted from Major Operations of the American Expeditionary Forces in France, 1917-1918, prepared in the Historical Section, the Army War College.

During the night of November 3-4 the 5th Division made an effort to cross near Brioules. Three companies got over, but the rest could not follow. These companies entrenched and held on to their precarious position. In the afternoon another crossing was attempted at Cléry-le-Petit, but the first bridge was destroyed by artillery fire and this attempt failed. But meanwhile the troops already over at Brioules, by a surprise attack, got across the canal which here parallels the river; other troops crossed just below, on rafts and by swimming, and established themselves in the woods on the east bank. On the morning of the 5th these woods and the adjoining hills were cleared and the left of the division was enabled to cross. By night the division held the whole line of heights from Milly to Vilosnes. On the night of the 7th, its line ran eastward and southward from Lion-devant-Dun to the Harau-mont—Brandeville road, where it connected with the French Second Colonial Corps, which in the meantime, had relieved the French Seventeenth Corps. Meanwhile the rest of the army had progressed and had reached the west bank of the Meuse all the way down to Remilly. From here the line turned west through Thelonne to the Bar, and connected with the French Fourth Army.

On November 5 General Pershing issued general instructions covering future operations of the American armies, in which he expressed confidence that "the energetic action of the First Army should completely expel the enemy from the region between the Meuse and the Bar within the next few days." Corps and division commanders were called upon for bold and energetic action. Where resistance was broken the troops were to be pushed forward without regard to objectives or fear for their flanks.

Both the First and Second Armies were ordered to prepare to undertake operations with the ultimate purpose of driving the enemy beyond the frontier in the region of Briey and Longwy. As preliminary to this offensive, the First Army was directed (*a*) to complete the occupation of the region between the Meuse and the Bar; (*b*) to drive the enemy from the heights of the Meuse north of Verdun and south of the Forêt de Woevre; (*c*) to conduct an offensive with the object of driving the enemy beyond La Thinte and La Chiens Rivers.

Between November 1 and 7 the left boundary of the First Army had been changed several times. The last change, announced in orders on the 8th and effective on the 9th, limited the left of the army to Mouzon, the original objective having included Sedan. On the 5th, however, a verbal message, later confirmed in writing, had been received from General Pershing, directing the occupation of Sedan, and suggesting that advantage be taken of the opportunity for pressing the advance throughout the night, boundaries not to be regarded.

The 1st Division was in position along the Meuse from Villemonty to Mouzon. The commanding general of the Fifth Corps went in person to division headquarters and verbally ordered the division to march upon Sedan, to cooperate with the First Corps in the capture of that place. The division was assembled in rear of its position and after dark commenced its march,

MEUSE-ARGONNE 3rd PHASE FIRST ARMY



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

moving in five columns. During the night of November 6-7 elements of the division marched through or around the entire First Corps, and in the morning it came out upon the heights dominating Sedan, clearing away some little opposition. Preparations were made to continue the advance, but in the afternoon the division was ordered to withdraw south of the line La Besace—Autrecourt. The change in direction of the First Corps, from north to northeast, opened a gap on the left of the First Army, which the French were not in a position to fill at once. A reserve division was disposed so as to protect the flank here, if necessary, and American divisions were kept in line temporarily. The First Corps was withdrawn from the line, and the Fifth Corps took over command of its former front until the French should be ready to extend their right.

From November 7 to 10 there was little activity in our lines north of Stenay. East of the Meuse, however, the Third Corps and the French Second Colonial Corps continued their advance. On November 8 the Third Corps, facing north, had passed beyond Brandeville; the French, facing east, extended this line through Flabas and north of Verdun to a junction with the Second Army. On the 9th the 32d Division took over the left section of the French line as far as Pouvillers; the Colonial Corps then pushed forward to the Thinte, through Damvillers to Moirey.

On the same day the 90th Division crossed the Meuse at Mouzay, just south of Stenay, the crossing having been secured earlier in the day by the 5th Division. The lines were then extended through the Foret de Woevre, and by night the 5th Division had reached Jametz. On the 10th the Colonial Corps reached Abaucourt, on the Verdun—Etain highway. The Third Corps made a further advance with its left and center, occupying the southern outskirts of Stenay.

The Fifth Corps extended its operations east of the Meuse, crossing the 2d and 89th Divisions on the line Stenay—Mouzon. On the 11th, slight gains were made at several points, and when hostilities were suspended the line of the First Army ran from Abaucourt to La Thinte River at Chaumont, along the river to Remoiville, along the northern edge of the Foret de Woevre to Stenay, thence to Mouzon and along the west bank of the Meuse to Wadelincourt.

MEDICAL DEPARTMENT ACTIVITIES

The general plan of evacuation to army units and their supply previously put into operation continued to be utilized through this phase of the operation, though certain of its details were modified to meet changing conditions. The increased length of the line of communications to railhead was a source of gravest anxiety, for the strain on the already overworked ambulance service increased progressively and could be relieved to only a limited extent by the advancement of a few of the army hospitals.

The following transportation was at the disposition of the Medical Department, First Army, on the night of October 31, exclusive of United States

Army Ambulance Service Section No. 600, loaned to the 33d Division, and United States Army Ambulance Service Section No. 649, attached to the 35th Division:¹

Left flank, First Corps:

United States Army Ambulance Service Section—

No. 520.

No. 570.

No. 569.

Ambulance Company No. 41.

Evacuation Ambulance Company No. 11.

French Sanitary Section No. 145 (11 ambulances carrying 5 prone patients).

6 French sight-seeing busses.

Total number of ambulances, 71; French sight-seeing busses, 6.

Center, Fifth Corps:

United States Army Ambulance Service Section—

No. 542.

No. 603.

No. 604.

No. 590.

French Sanitary Section—

No. 63 (15 ambulances carrying 5 prone).

No. 85 (20 ambulances carrying 5 prone).

2 French sight-seeing busses.

Total number of ambulances, 83, and 2 French sight-seeing busses.

Right flank, Third Corps:

United States Army Ambulance Service Section—

No. 560.

No. 571.

No. 599.

No. 602.

French Sanitary Section No. 84 (20 ambulances carrying 5 prone).

2 French sight-seeing busses.

Evacuation Ambulance Company No. 1, 12 ambulances.

Total number of ambulances, 80, and 2 French busses.

(Evacuation Ambulance Company No. 1 evacuated the 26th Division, which was with the French Second Colonial Corps.)

Army: 132 ambulances and 2 French busses.

Army Reserve:

French Sanitary Section—

No. 12 (20 ambulances carrying 5 prone).

No. 131 (13 ambulances carrying 5 prone).

United States Ambulance Service Section—

No. 506 (20 Fords).

No. 511 (20 Fords).

10 French trucks.

Total number of ambulances, 73, and 10 French trucks.

Summary: Corps, 234 ambulances and 10 French sight-seeing busses; army, 132 ambulances and 2 French sight-seeing busses; army reserve, 73 ambulances and 10 French trucks; total, 439 ambulances and 22 French trucks and sight-seeing busses.

The carrying capacity of the army and corps ambulances was 1,813 prone and 400 sitting patients. This total did not include corps trucks nor divisional ambulances or trucks.

On November 2, 1918, United States Army Ambulance Service Section No. 506 (20 ambulances) was attached to the First Corps. Evacuation Ambulance Company No. 7 was attached to Evacuation Hospital No. 15 at Glorieux, on October 31, 1918, and on the same date Evacuation Ambulance Company No. 5 was attached to Mobile Hospital No. 6, on the Varennes—Cheppy road. On November 10, 1918, this ambulance company was moved to Varennes, to be attached to Evacuation Hospital No. 14, and Evacuation Ambulance Company No. 6 was transferred from Les Islettes to Varennes, where it was attached to Evacuation Hospital No. 14.

Evacuation centers and areas remained as provided during the first phase of the operation.

At the beginning of the third phase, First Army Medical Department formations were disposed of as follows (dates represent the time organizations arrived at the places specified):²

Evacuation Hospital—

No. 4, Fromereville, Meuse, October 29.

No. 6, Souilly, Meuse, August 28.

No. 7, Souilly, Meuse, August 28.

No. 8, Petit Maujouy, Meuse, August 28.

No. 9, Vaubecourt, Meuse, August 30.

No. 10, Froidos, Meuse, September 20.

No. 11, Brizeaux Forestieres, Meuse, September 21.

No. 14, Les Islettes, Meuse, October 7.

No. 15, Glorieux, Meuse, October 13.

No. 16, Revigny, Meuse, October 15.

No. 20 (personnel only), Souilly, Meuse, October 1.

No. 21, (personnel only) Villers-Daucourt, Marne, October 17.

No. 22 (personnel only), Souilly, Meuse, October 7.

No. 23 (personnel only), Souilly, Meuse, October 7.

American Red Cross Hospital—

No. 110, Villers-Daucourt, Marne, September 24.

No. 114, Fleury-sur-Aire, Meuse, September 18.

Mobile Hospital—

- No. 1, Esne, Meuse, October 27.
- No. 2, Chateau de Salvange, Meuse, September 24.
- No. 4, Cheppy, Meuse, October 27.
- No. 5, Les Placys, Meuse, September 24.
- No. 6, Varennes, Meuse, October 7.
- No. 8, Deuxnouds-aux-Bois, Meuse, October 15.

Neurological Hospital—

- No. 1, Benoitte Vaux, Meuse, September 5.
- No. 3, Nubecourt, Meuse, September 20.

Evacuation Ambulance Company—

- No. 1, Souilly, Meuse, September 21.
- No. 2, Fromereville, Meuse, October 29.
- No. 5, Cheppy, Meuse, November 1.
- No. 6, Les Islettes, Meuse, October 11.
- No. 7, Verdun, Meuse, November 1.
- No. 8, Fleury-sur-Aire, Meuse, September 20.
- No. 10, Froidos, Meuse, September 23.
- No. 12, Vaubecourt, Meuse, September 23.

Base Hospital No. 83 (personnel only), Revigny, September 20.

Gas hospital:

- La Morlette, Meuse, operated by miscellaneous personnel.
- Rambluzin, Meuse, operated by miscellaneous personnel.
- Julvecourt, Meuse, operated by miscellaneous personnel.
- Rarecourt, Meuse, operated by miscellaneous personnel.
- Verrieres, Marne, operated by miscellaneous personnel.

Contagious hospitals, Verrieres and Benoitte Vaux (French).

Ambulance Company—

- No. 42 (personnel only), Fleury-sur-Aire, Meuse, October 29.
- No. 120 (personnel only), Villers-Daucourt, September 26.

Field hospital—

- No. 41, Varennes, Meuse, November 4.
- No. 42, Cheppy, Meuse, October 31.

Medical Supply Depot:

- Varennes, Meuse, October 10.
- Souilly, Meuse, September 14.
- Vaubecourt, Meuse, September 16.
- Les Islettes, Meuse, October 4.
- Fleury-sur-Aire, Meuse, October 1.

Trucks not being available for the purpose, it was impossible to move the large and heavy evacuation hospitals to points off the railway concurrently with the advance of the troops. Moreover, the number of ambulances being limited, those available would not have been adequate to carry to railhead patients from a large number of such units had they been so advanced. To mitigate the fatigue incident to the long journey from the front to the army evacuation areas, divisional and corps field hospitals were placed

in echelon to act as rest stations. They were equipped to furnish food and warmth and were provided with facilities for rest, treatment of shock, and for operations. Also, as opportunity permitted and resources warranted, certain army hospitals were advanced as follows:³ Mobile Hospital No. 8, from Deuxnouds-aux-Bois to Exermont, November 3; Evacuation Hospital No. 7, from Souilly to St. Juvin, November 7; Evacuation Hospital No. 14, from Les Islettes to Varennes, November 8; Field Hospital No. 41, from Villers-Daucourt to Varennes, November 8; Evacuation Hospital No. 3, from Mont Frenet to Fontaine Routon, November 10; Mobile Hospital No. 1, from Esnes to Bantheville, November 10; Evacuation Ambulance Company No. 6, from Les Islettes to Varennes, November 6.

Varennes was the only advanced point whence railway evacuation was practicable from the First and Fifth Corps at this time.³ "Four years of artillery exchange had so destroyed the railroad from Verdun to Sedan, on the west bank of the Meuse, that engineers could not repair it in time for it to be of use, and no attempt was made to install evacuation hospitals in this area north of Verdun, for a plunging fire from the heights made the terrain untenable till Cote St. Germaine was captured. Evacuation Hospital No. 4, at Fromereville, had suffered from indirect shelling, although conspicuously marked and well protected from direct fire."⁴

As transportation was inadequate to move army hospitals forward, the only recourse for surgical equipment in the absence of railway transportation was the assignment to divisional hospitals of the surgical and X-ray camions belonging to mobile hospitals. Operated cases, as soon as they became transportable, were then slowly evacuated through the chain of division and corps hospitals to evacuation hospitals.⁴

A topographical map of the region indicates some of the physical obstacles which had to be overcome in the supply and evacuation services of any army operating on this terrain, which had been the scene of disaster to more than one army in the past; yet hospitalization for many thousand combatant troops was provided in this most inhospitable and rugged area, where not a house was left standing and where roads were scarce and deeply scarred by shells. Furthermore, patients were transferred from these hospitals in comparative comfort, in spite of shell-torn roads and deep mud following incessant autumnal rains. Notwithstanding the lengthening of the line of communications to railhead, the evacuation service had been so developed that within nine hours after the signing of the armistice all wounded had been received, hospitalized, and operated.⁴

REFERENCES

- (1) Final report of the chief surgeon, First Army, November 20, 1918, 17. On file, Historical Division, S. G. O.
- (2) Report on the Medical Department units, First Army, by the chief surgeon, First Army, February 6, 1919. On file, Historical Division, S. G. O.
- (3) Medical activities in the Zone of the Armies, by Col. A. N. Stark, M. C., undated, 16. On file, Historical Division, S. G. O.
- (4) *Ibid.*, 17.

CHAPTER XXX

THIRD PHASE—Continued

FIRST CORPS

On November 1 at 5.30 a. m. the First Corps attacked,¹ with three divisions in line, arranged from left to right as follows: 78th, 77th, and 80th Divisions. The 42d Division was in reserve. Also the 82d Division occupied the corps position of security and was prepared to advance on two hours' notice. The attack was to be an enveloping one from the right, to flank the enemy out of the Bois de Bourgogne. On the day of the attack the high ground south of Verpel was to be taken, with the object of driving on to the Boulton-aux-Bois, upon further orders. The objectives of the corps were: First objective, Imecourt—Alliepont—north edge of Bois des Loges; second objective, Malmy—Sivry les Buzancy—vicinity of the northern part of Bois des Loges; corps objective, Fontaine des Parades—Cote 278—northern edge of Bois des Loges—Grandpre—Talma; subsequent objective, the ridge west of Fosse—Buzancy—Harriecourt—the ridge 2 km. (1.2 miles) north of Briquenay—to connect with the French Fourth Army at Boulton-aux-Bois.²

After an artillery concentration on important points, the attack was opened by the 80th Division on the right, one regiment of the 77th Division (with another in close reserve) in the center, and the 78th Division, with three regiments in line, on the left. The right of the 80th Division advanced beyond Imecourt to Malmy. The left was held up by enemy resistance in the woods about 1 km. (0.6 mile) south of Alliepont.^{3, 4} The 77th and 78th Divisions made little advance, due to enemy machine-gun nests in Bois des Loges and the line east and west of these woods.^{3, 4}

On November 2 the advance of the corps was so rapid that prisoners were captured from a unit not yet in line. By this time the enemy positions had become untenable. A determined and vicious attack had forced the German command to decide upon a general withdrawal, which was effected hastily, in front of our advancing troops. The Bois de Bourgogne was evacuated in conjunction with the retirement, and with the exception of a weak rear guard action, in which machine guns and harassing artillery fire played a prominent part, no halt was made until the enemy reached the right bank of the Meuse River. On the night of November 2 the corps line extended from the vicinity of Ferme des Loges northwardly just east of Grandpre—Briquenay road to Briquenay, thence to a point 1 km. (0.6 mile) northeast of Bois de Thenorgues. Then from a point in the vicinity of Le Puiset des Nonnes generally eastwardly to the vicinity of the northwest corner of Bois de la Folie.^{3, 4}

On the night of November 3 the line ran from southwest of Briennes-sur-Bar, where there was contact with the 40th Division of the French Ninth

Corps, to Verrieres, thence to a point approximately 2 km. (1.2 miles) north-east of St. Pierremont, thence southeastwardly to a point approximately 1 km. (0.6 mile) northwest of Cote Jean.^{3, 4}

On the night of November 4 the corps held Les Petites Arnoises, Bois de Sy, Oches and the Bois de Four. The 80th, 77th, and 79th Divisions each held sectors until this time.^{3, 4}

On the morning of November 5 the 42d Division, which had been in corps reserve, passed through the 78th Division and occupied the left half of the corps sector. The 80th Division advanced and occupied Beaumont. The line now held by the corps ran through the north of the Bois de Mont Dien, through the southern portion of Bois de Raucourt to just west of Yoncq, thence to Beaumont.^{3, 4}

On the 6th of November the 1st Division of the Fifth Corps passed through the 80th Division. The 80th Division then assembled in the northwest of Sommauthe, thence to move forward upon receipt of orders.⁵ The 42d and 77th Divisions advanced, the 77th reaching the Meuse River; and the line of the 42d, extending approximately from Cheveuges to Aillicourt, made the corps line approximately as follows: Cheveuges—Thelonne—vicinity of Mouzon. The elements of the 77th Division effected a crossing of the river at Villers-devant-Mouzon.^{3, 4}

On November 9 the 77th Division relieved the 42d Division and was now holding the entire First Corps front. This corps was to be eventually taken over by the French Ninth Corps, which was then holding the sector on the left of the 77th Division.^{4, 6, 7}

On November 10 the left of the First Army, having been limited to Mouzon, the Fifth Corps took over command of the First Corps front until the French should be ready to extend their right.⁷

MEDICAL DEPARTMENT ACTIVITIES

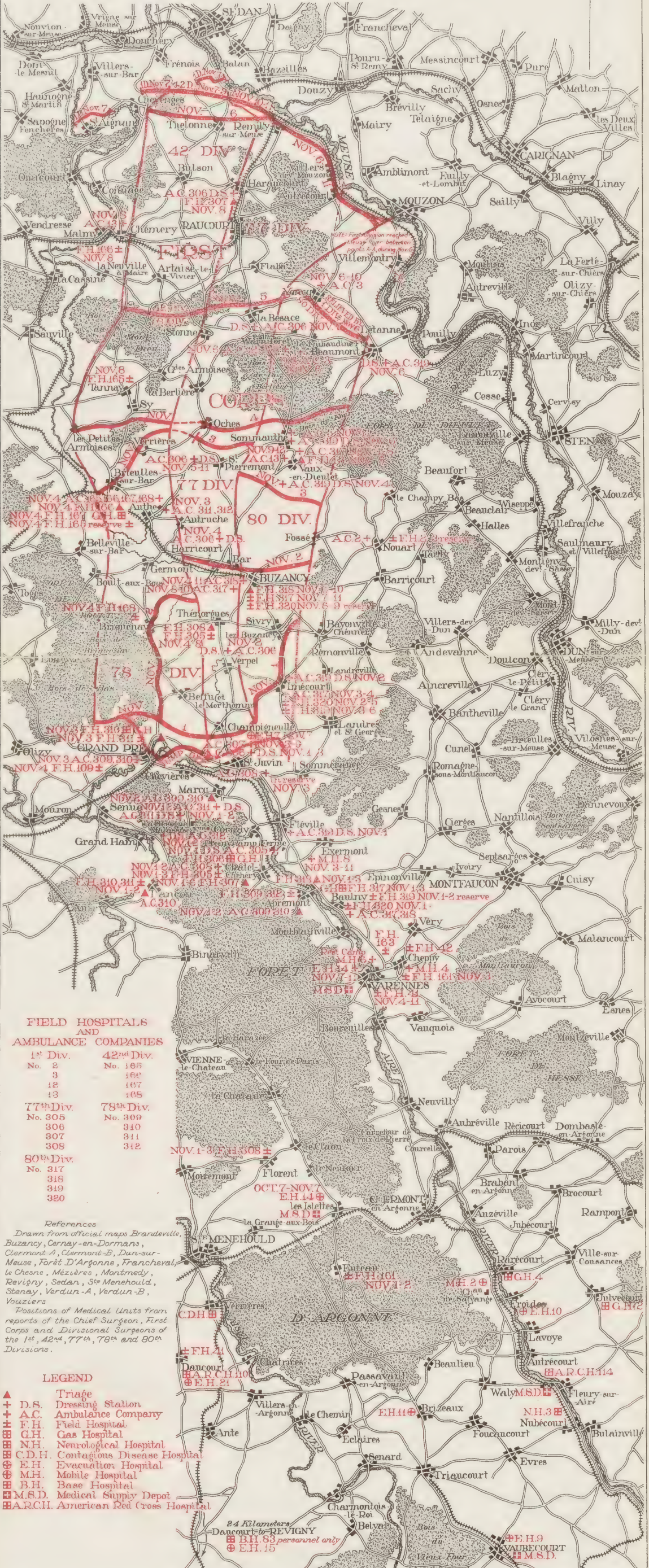
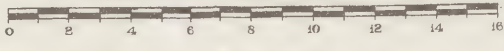
The plan of evacuation issued as Annex No. 8 to Field Order No. 85, October 24, 1918, and quoted above in the history of the First Corps during the second phase of the Meuse-Argonne operation, continued in operation. All divisions had their hospitals grouped and work so organized that casualties passed through them without confusion or delay. Triages were well organized and worked smoothly. The consultants had now become well acquainted with their duties so that they were able to promote considerably the professional services throughout the corps. By circulating among the divisions they not only discovered and corrected defects promptly, but were able to keep the corps surgeon apprised of the efficiency and needs of their respective specialties. The Germans were now retreating rapidly, casualties were few, and the problems of the Medical Department were comparatively simple, though the evacuation route was becoming very long. Generally speaking, road conditions were improved except near Briulles-sur-Bar where the Germans had destroyed an important road by a succession of 15 mine craters. For a time traffic over this route was interrupted here, for the road at this

MEUSE - ARCONNE OPERATION

THIRD PHASE

1st - 42nd - 77th - 78th - 80th DIVISIONS
NOVEMBER 1-11, 1918.

Scale in Kilometers



FIELD HOSPITALS AND AMBULANCE COMPANIES

1 st Div.	42 nd Div.
No. 2	No. 165
3	166
12	167
13	168

77 th Div.	78 th Div.
No. 305	No. 309
306	310
307	311
308	312

80 th Div.
No. 317
318
319
320

References
Drawn from official maps Brandeville, Buzancy, Carney-en-Dormans, Clermont-A, Clermont-B, Dun-sur-Meuse, Forêt D'Argonne, Francheval, le Chesne, Mézières, Montmedy, Revigny, Sedan, St. Menehould, Stenay, Verdun-A, Verdun-B, Vouziers

Positions of Medical Units
From reports of the Chief Surgeon, First Corps and Divisional Surgeons of the 1st, 42nd, 77th, 78th and 80th Divisions.

- LEGEND**
- ▲ Triage
 - + D.S. Dressing Station
 - + A.C. Ambulance Company
 - ± F.H. Field Hospital
 - ⊞ G.H. Gas Hospital
 - ⊞ N.H. Neurological Hospital
 - ⊞ C.D.H. Contagious Disease Hospital
 - ⊞ E.H. Evacuation Hospital
 - ⊞ M.H. Mobile Hospital
 - ⊞ B.H. Base Hospital
 - ⊞ M.S.D. Medical Supply Depot
 - ⊞ A.R.C.H. American Red Cross Hospital

point traversed a rather swampy area and passage around these craters was very difficult, until a corduroy road was built, replacing that destroyed. Transportation was sufficient to care for all casualties, though it was necessary to continue utilizing trucks to transport the slighter cases.

Movement of the army supply park to Les Islettes facilitated greatly the supply to all divisions in the corps.⁸

THE 78TH DIVISION ^a

In carrying out its part of the mission of the First Corps, in the attack of November 1, to flank the enemy out of the Bois de Bourgogne by envelopment from the right and then to connect with the French at Boulton-aux-Bois, the 78th Division, on a front of 8 km. (4.9 miles), was to cover the left flank of the 77th Division by advancing so as always to face the Bois de Bourgogne and make a holding attack west of Grandpre. The objective laid down for the 78th Division in the first day's attack was the northern edge of the Bois des Loges and a line running from there, west, midway through the Bois de Bourgogne, thence along the existing front to the corps boundary. The subsequent objective was a ridge 2 km. (1.2 miles) north of Briquenay, and the establishment of connection with the French Fourth Army at Boulton-aux-Bois. This advance was to be made in such a manner that any resistance coming from Bois de Bourgogne could be met at once. The 155th Infantry Brigade was ordered to take Bois des Loges and to clear it out thoroughly on the first day. The 156th Brigade (less one battalion) was ordered to maintain liaison with the French around Talma, to advance its right flank about 2.5 km. (1.5 miles), and to cover the left flank of the 155th Brigade in its advance. On the second day the 155th Brigade was to take that part of the subsequent objective lying north of Briquenay, and the 156th that to the south.⁹

The infantry preparations to accomplish these objects were simple. The 155th Brigade made no changes in its positions. The 156th Brigade continued to hold its front with the 311th Infantry. Two battalions of the 312th Infantry were moved up to the vicinity of Grandpre, so as to be able to protect the left of the 155th Brigade. The other battalion of the 312th, with the 307th Machine Gun Battalion, constituted the division reserve.⁹

For two hours immediately preceding the infantry attack on November 1, the Bois des Loges was swept by divisional artillery fire, together with such heavy army artillery as was not being used for counterbattery work elsewhere. When the infantry attack started, it was preceded by a rolling barrage and by a raking fire on known or suspected enemy positions in the woods and its approaches. A heavy machine-gun barrage was also laid down upon the Bois des Loges and the spurs west of it from the south, southwest, and west, with searching fire on the road to Briquenay from just northwest of Champigneulle to Le Morthomme. Such was the natural strength of the positions in the Bois des Loges, however, that even though only slight shelters had been constructed, this great concentration of artillery and machine guns

^a For map of activities of this division for this period, see Plate XLV.

was unable substantially to affect the machine-gun nests in it. On the right the troops advanced and reached the road from Champigneulles to Ferme des Loges, capturing machine-gun nests along it. The advance was then stopped by more machine guns to the north. The 77th Division, having failed to take Champigneulles, as planned, the 309th Infantry therefore could not attempt a flanking movement from the east. Further attempts to advance through the woods resulted only in losses, and at nightfall the 309th Regiment was still in position on the Champigneulles—Ferme des Loges road. At 6 p. m. the 310th Infantry had advanced slightly from this road, but had not materially weakened the resistance. The 311th Infantry, on the left, reinforced during the day by two companies of the 312th Infantry, established a line in the Bois de Bourgogne late in the afternoon, after fighting hard in the woods and after beating off one serious counterattack. The way was thus cleared to assist the advance of the brigade on the right through the Bois des Loges by flanking the Bois des Loges from the northwest.⁹

On November 2 it was planned to have the 312th Infantry attack from the west, behind a rolling barrage, at 5.30 a. m. When the 312th advanced, no real opposition was encountered, and its movement was continued to the ridge beyond Briquenay. The 310th Infantry, moving north and northwest, through the Bois des Loges, reached the edge about 8.30 a. m., and shortly thereafter the 309th Infantry arrived. The only resistance to their progress was long-range machine-gun fire. Both regiments now halted to reorganize their units before starting the pursuit. This was taken up at about 10.30 a. m. Pursuing troops encountered a few enemy machine gunners out of Beffu-et-le-Morthomme about noon, and advanced steadily northward with only occasional slight machine-gun resistance until about 5.30 p. m. The town of Briquenay was taken in the afternoon, and at dark the right of the line ran across the Canal des Arches, and to the north of the Bois de Thenorgues. The 311th Infantry extended its line along the subsequent objective, but the yperiting of the Bois de Bourgogne, which had been done by our artillery in preparation for the attack, had been so successful that no resistance was met there at all, and the advance was continued up the Briquenay road unmolested. The 2d and 3d Battalions of the 312th Infantry were assembled after the advance from the Bois des Loges began and were moved to the vicinity of Briquenay before encamping for the night.⁹

On November 3 the advance was continued all day by the leading units of the division. Boulton-aux-Bois was entered at 4 a. m., Belleville-sur-Bar was taken at noon, and Chatillon-sur-Bar was reached before dark. Farther east the 312th Regiment had brushed the enemy out of Germont at about 9.30 a. m., and then advanced its detachments north through Authe toward Briulles-sur-Bar and west toward Chatillon-sur-Bar. Briulles-sur-Bar was entered at 4 p. m. by the 312th, whose line for the night ran north of Chatillon-sur-Bar and Briulles-sur-Bar. The 309th and 310th Regiments of Infantry entered Authe before noon and speedily outflanked machine-gun resistance on the ridge about 1 km. (0.6 mile) north of Authe. These regiments assisted the 77th Division to turn the enemy out of Autruche and

went on toward Verrieres. The town of Verrieres was entered by 4.15 p. m., and a position was taken up for the night on the ridge northeast of that town.⁹

On November 4, because of the exhaustion of the front-line battalions, the reserve of the 155th Brigade passed through the front-line battalions to take up the pursuit. By noon, the advancing troops reached the north edge of Bois de Sy, where they came under machine-gun fire from Sy and the ridge to the north of that town, and artillery fire from Bois du Fay and from the north of those woods. This fire prevented any farther advance during the day and the night of November 4-5. During the day the 311th Infantry took Les Petites Armoises and advanced to the road between that town and Sy before night.

On November 5 the 42d Division was ordered to relieve the 78th by passing through its lines. The relief was made about noon, at which time the 155th Brigade had sent patrols to and through the town of Sy, and had located the enemy on the ridge to the north. The 156th Brigade had taken the town of Tannay at 6.15 in the morning and was 1.5 km. (0.9 mile) to the north of that place along the road to Chemery when it was passed through. Upon completion of the relief, the troops of the division were assembled at Brioules-sur-Bar and at Germont, where they camped for the night. On November 6 the division marched to the vicinity of Marcq and Chevieres, and on the 7th to the Argonne camps west of Varennes. After two days' stay in this area, the division marched to the Florent—Les Islettes area, and on November 11 marched to an area south of Ste. Menchould.⁹

MEDICAL DEPARTMENT ACTIVITIES

Plans had been made prior to the advance of November 1 to effect as soon as possible union of the two sections in which the sanitary train had been operating during the second phase of the operation; i. e., with two ambulance companies and two field hospitals behind each flank. It was also proposed that these formations follow up the advancing troops by "leapfrogging" as rapidly as the inadequate transportation permitted. The following memorandum, approved by G-1 of the division, was therefore published by the division surgeon to all medical officers of the division:¹⁰

It is planned that evacuations and communications in general shall follow two main routes:

One is via Beffu et Le Morthomme, Champigneulle, St. Juvin, Marcq, Cornay, and Apremont. At present, Ambulance Company 311 has a dressing station at Marcq and Triage No. 2 (Field Hospitals Nos. 309 and 312) is at present at Apremont. When conditions permit, the dressing station will move to Champigneulle and the triage to Marcq. Later the gas and sick hospitals will move to Marcq.

The other route is via Bellejoyeuse Ferme, Grandpre, Senue, to Lancon. At present, Ambulance Company 312 has a dressing station at Malassise Ferme and Triage No. 1 (Field Hospitals 310 and 311) is located at Lancon. When conditions permit, the dressing station will move to Grandpre and Bellejoyeuse Ferme in turn, and the triage will move to Grandpre. It is possible that at a later state both triages will be consolidated at Grandpre or at Marcq and all hospitals stationed with the triage.

This plan worked out as follows: (a) The dressing station at Marcq (Ambulance Company No. 311) was moved to Authe, and the triage at Apremont was moved up to replace the dressing station at Marcq. (b) The dressing station at Malassise Ferme (Ambulance Company No. 312) was moved to Authe. (c) The triage at Lancon was moved to Grandpre. (d) Later the triage at Marcq consolidated with that at Grandpre, where it remained until the division was withdrawn.¹¹

By this time the troops were advancing so rapidly that the ambulance companies were simply directed to go ahead as far as they could and to establish wherever possible, the result being that both companies in the forward area established in the church at Authe.

The last casualties of the division occurred in the towns of Briulles-sur-Bar and Verrieres. An attempt was made to establish an ambulance dressing station at Briulles-sur-Bar on the night of November 4, but owing to the extremely heavy shell fire at this point it was impossible to enter the town: but a few hours later ambulance service was established between Authe and Briulles-sur-Bar. In the meantime, owing to the impassable condition of roads, which were mined and blown up for a distance of 500 meters (545 yards), ambulances were unable to get from Briulles-sur-Bar to Verrieres and Les Petites Armoises, and litter-bearer sections from the ambulance companies were sent to these towns. For 20 hours the wounded were evacuated by them to the ambulance head at Briulles-sur-Bar, whence they were carried to Authe and Grandpre. In preparation for the large number of wounded expected as a result of the offensive of November 1, the First Corps had established a rest camp near Varennes for the reception of all sitting cases. Establishment of this camp relieved the sanitary train of evacuation to a considerable extent, but, on the other hand, the recumbent wounded were evacuated to evacuation hospitals, in one instance a distance of between 90 and 100 km. (55-62 miles) from the front.¹⁰

The triage and hospitals at Apremont had been shelled by long-range guns at intervals during the entire time that they were located at this point, and on one occasion (October 30) as many as 24 large-caliber shells (9-inch or more) fell in the hospital area. Seventeen tents were hit, with but three casualties, patients having been promptly removed to trenches or shell holes. This bombardment was not thought to have been directed at the hospitals but at a road 50 meters (54 yards) north of them, being used at the time by an artillery organization which was on the march.¹⁰

The regulating point situated just north of Clermont had been moved forward to the Baulny—Varennes road, 91 meters (100 yards) north of the road leading to Mobile Hospital No. 6 and the First Corps rest camp relay station. Removal of the wounded to army hospitals was regulated at this point. As the evacuation hospitals were filled, nontransportable wounded were sent to Mobile Hospital No. 6.¹¹

On November 4 all units of the sanitary train at Grandpre experienced a bombing raid by hostile planes, one bomb landing in a yard back of a triage 30 meters (100 feet) from it. The train suffered 1 death and 7 casualties;

those of other organizations in or near the triage numbered 11. Two trucks and one touring car of the train were damaged, one truck being practically destroyed.¹¹

On November 6 orders were received relieving the 78th Division and directing movement back to Argonne camps west of Varennes. Next day preparations for the movement of the sanitary train progressed rapidly. On November 10 all units were reported at Les Islettes, where all property was sorted, excess disposed of by shipment to proper depots, and necessary and serviceable property and equipment retained. On the 12th all units having been moved to Braux-Saint Remy, reached that point where property and equipment were inventoried and troops rested.¹¹

THE 77TH DIVISION ^b

On the night of October 31 the 153d Infantry Brigade (77th Division) took position as the leading brigade of the division, preparatory to relieving the 82d Division in line. The 305th Infantry took position east and south of St. Juvin, leaving a screen of the 82d Division in the front line; the 306th Infantry was placed in a support position in the woods southeast of Marcq.¹²

On November 1 the 153d Brigade attacked at 5.30 a. m., having relieved the remaining front-line elements of the 82d Division during the previous night. The front-line position was between Champigneulles and St. Juvin, and was practically the same line turned over by the 153d Infantry Brigade of the 77th Division, to the 78th Division, on October 15-16. The attack was preceded by a two hours' artillery preparation in the division sector. Very heavy resistance was met from enemy machine guns, artillery, and determined local attacks, not only in the front of the division sector but also from the sector of the division on the right flank. Despite this stiff resistance, the front line advanced on the right a distance of 1 km. (0.6 mile) to the right, turning east from Champigneulles to St. Georges. On the left, the line advanced to about 400 meters (436 yards) south of Champigneulles.¹²

On November 2, after a short artillery preparation, two companies of the 305th Infantry captured Champigneulles, at 7 a. m. At the same time, the 3d Battalion, 305th Infantry, advanced on the right. During the early morning, two battalions of the 306th Infantry had marched to the eastern boundary of the brigade sector, and were attacking in a northwest direction, in liaison with the 80th Division on the right. The 305th Infantry, on the left, and the 306th Infantry, on the right, steadily advanced and before noon Verpel was taken. At 2 p. m., Thenorgues was captured. During the afternoon our troops advanced rapidly in the direction of Buzancy and Harricourt. During the afternoon and evening the troops reached the western outskirts of Buzancy, in liaison with the 80th Division, and Harricourt and Bar were taken, and the division line was established for the night on the road north of Harricourt.¹²

On November 3, the 306th Infantry continued the advance, followed by the 305th Infantry in support. Little resistance was encountered. Autruche

^b For map of activities of this division for this period, see Plate XLV.

was captured at 9 a. m. and by noon our front-line battalions, in liaison with the 78th Division on the left and the 80th Division on the right, passed through this place. Before 2 p. m. the advancing troops passed through Fontenoy and at 3 p. m., had passed through St. Pierremont in the direction of Oches, which seemed to be a point of resistance of the enemy. For the night the division front line was established on the hills south of Oches.¹²

On November 4, the 154th Infantry Brigade, which had been supporting the 153d Infantry Brigade since the beginning of the attack on November 1, was ordered to pass through the 153d Brigade and to continue the advance. The 153d Brigade then took a support position and was ordered to follow the attacking brigade at 2.5 km. (1.5 miles). On this day the 154th Infantry Brigade took the town of Oches and entrenched on the north side of the town, having advanced about 1 km. (0.6 mile) beyond where the troops of the 152d Brigade were on the previous night.¹²

On November 5, both brigades were in line and took up the advance, the 153d on the right of the sector and the 154th on the left. The hour for the advance was 6.30 a. m. The infantry made a quick advance along the woods roads, passing by La Polka Ferme, Le Cendrieres Ferme, toward La Besace. At 10.30 a. m., La Besace was entered. In front of La Besace the enemy was found in force and the town itself was continually subjected to machine-gun fire during the afternoon and evening. For the night the outpost line was established just north of the town.¹²

On November 6, the advance continued to push forward, the direction of the advance turning sharply to the northeast just north of La Besace. The 305th Infantry executed a passage of the lines of the 306th Infantry, in position north of La Besace. The advance was pushed vigorously, and by 2 p. m., patrols had reached Autrecourt on the west bank of the Meuse. At 4 p. m., the division front-line battalions were established on the heights overlooking the Meuse on the line beyond Chamblage Ferme, with support battalions close in the rear. Two platoons were sent to occupy Autrecourt and Villers-devant-Mouzon, and patrols were sent out to reconnoiter the Meuse in the brigade sector.¹²

On November 7, the leading elements of the brigade were pushed up to the Meuse, preparatory to its crossing. The river had been found to be very deep and absolutely unfordable, so it was necessary to await the erection of a bridge. Finally, at 3.45 p. m., the bridge was completed and the 1st Battalion of the 305th Infantry started across the river. Two platoons succeeded in crossing, but machine-gun fire made it impossible for more to pass over without incurring heavy losses. The lines were established for the night with two platoons across the river just southeast of Villers-devant-Mouzon, and the remainder of the front line battalion along the river on a general line Villers-devant-Mouzon—Autrecourt.¹²

On November 8, the positions were reorganized, one battalion being disposed in front, following the river bank along the general line Villers-devant-Mouzon—Autrecourt to Le Vaubourg. Support battalions were placed

on the hills overlooking Autrecourt in the vicinity of Chamblage Ferme and the 306th Infantry in reserve in the neighborhood of Raucourt.¹²

From November 8 to November 11, the position of the division line remained unchanged, except that on November 9, the 77th Division extended its left to include the front of the 42d Division, which had been relieved from the line.¹³

On November 10, the First Army Corps was relieved by the Fifth Army Corps and the 77th Division on that date passed under the command of the commanding general, Fifth Army Corps.¹⁴

MEDICAL DEPARTMENT ACTIVITIES

On October 28, Ambulance Companies No. 305 and No. 307 bivouacked in a ravine 1.5 km. (0.9 mile) southwest of Chatel Chehery, on the road from that town to La Viergette. Both retained this location until October 31, when Ambulance Company No. 305 moved to Pleinchamp Ferme, where it established an advance dressing station on the following day, receiving 50 cases.¹⁵ It detailed a sanitary squad to duty at St. Juvin and continued to perform these services until the division withdrew. On November 3, four Ford ambulances of United States Army Ambulance Service Section No. 524 joined its advance dressing station and continued permanently assigned to it until the station closed. Ambulance Company No. 306, on October 27, had established a dressing station in cellars at St. Juvin, which began to receive patients on November 1, 450 being admitted on that date. Evacuation to the station was effected by 48 litter bearers belonging to this company, thence to the triage at Chatel Chehery by 12 G. M. C. ambulances. On the 2d, this evacuation service was taken over by six cars of United States Army Ambulance Service Section No. 524 and by six G. M. C. ambulances, and car posts were established at Champigneulles and Verpel. At the latter place an advance dressing station was established on this date by 10 a. m., and later the entire ambulance company moved there, with the exception of the 48 litter bearers who were evacuating front-line formations. On the 4th, this company opened an additional dressing station at Harricourt, where it treated 100 cases, evacuating them to the triage now located at Thenorgues.¹⁶ Company car posts were now established at Fontenay and St. Pierremont. Next day the company established an advance dressing station in the village church at St. Pierremont and there cared for 400 patients, many of whom it was obliged to evacuate by truck. This station continued to operate until November 11, treating a large number of wounded civilians and casuals, and giving them food and shelter as well. On November 7, this company also established a small station, staffed by 1 officer and 3 enlisted men, at La Besace, and on the 8th, one at Haraucourt, staffed by 1 officer, 19 men, and an advance triage detachment. Because of poor roads the latter functioned as a temporary hospital, wounded reaching it through car posts established at Remilly, Anzecourt, Autrecourt, and at a point south of the last-mentioned town.¹⁷

Ambulance Company No. 307 moved to St. Juvin on November 3, where it took over the dressing station of Ambulance Company No. 30, and operated it until November 9, treating not only casualties of the 77th Division but also some patients from other divisions, and a few German prisoners.¹⁶

Ambulance Company No. 308, having experienced several casualties and considerable damage to transportation from shell fire at Martincourt Ferme, on the night of October 28 moved to the vicinity of Chatel Chehery, where part of it occupied billets on the following day.¹⁸ This being the animal-drawn company, 50 of its personnel and 5 general service wagons were used to repair roads around the triage located there. On the 3d it moved to St. Juvin, where it was held in reserve until the armistice.¹⁵

Field Hospital No. 305 was established in tentage on October 28 as the division medical hospital, at Chatel Chehery, where it remained until November 3. It then moved to Thenorgues, where it operated until the 8th.

Field Hospital No. 306, the division gas hospital, operated at Chatel Chehery from October 28 to November 8, receiving 403 patients.¹⁸

Field Hospital No. 307 operated the triage at Chatel Chehery until November 3, admitting 549 patients. At this time it cared for surgical patients only, transferring others to the gas and medical hospitals which were adjacent.¹⁸ Field Hospital No. 307 then operated as the divisional medical hospital until November 6, taking over cases of this class from Field Hospital No. 305, when that unit moved, on the 3d, to Thenorgues. On November 7 and 8 Field Hospital No. 307 was en route to Haraucourt to establish a triage.¹⁹

Field Hospital No. 308 was established from October 17 to November 3 at Florent, acting as a general hospital for the division and receiving all classes of patients to a total of 1,076. It then moved to Thenorgues, where it operated as a triage.²⁰ While at this location it received 706 patients, of whom 244 belonged to other divisions. Patients admitted here were classified as follows:¹⁹ Severely wounded, 144; slightly wounded, 280; gassed, 25; sick, 307.

Throughout its service in the Meuse-Argonne operation the medical supply depot accompanied the triage. On account of lack of transportation the army supply depot from which that of the division drew its supplies did not advance, and this lack resulted eventually in a round trip between them requiring three days. Despite this fact, however, the matériel proved fully adequate; happily the number of casualties in this operation was relatively small.²¹

THE 80TH DIVISION^c

For the attack of November 1 the mission of the division was to cover the left of the Fifth Corps, attacking on the right of the First Corps, and to seize the high ground to the north of Sivry-les-Buzancy. On the first day it attacked, the zone of action of the 80th Division was: On the right, Vauquois, Cheppy, Charpentry, Baulny, Exermont, Fleville, Sommauthe, St. Georges, thence along the 300th meridian to a ridge northwest of Imecourt;

^c For map of activities of this division for this period, see Plate XLV.

on the left. Apremont, Chatel Chehery, Cornay, meridian 298, from the Aire River to the western edge of Buzancy, thence north to St. Pierremont. The parallel of departure was south and west of St. Georges. The 160th Brigade was the attacking brigade in line of regiments, the 319th Infantry on the right and the 320th Infantry on the left, formed in columns of battalions.²²

After a two hours' artillery preparation, on November 1 the first wave of the attacking troops formed behind the barrage and began its advance in liaison with the 2d Division on the right (Fifth Corps) and the 77th Division on the left. Enemy machine guns had taken position in the front of the line of departure of the division, and upon the advance of our troops opened a heavy fire. The attack on the right progressed rapidly, but the 320th Infantry on the left was checked by heavy enemy machine gun fire from the north end of Ravin aux Pierres. Enemy artillery fire at this time was very heavy. By nightfall troops had reached in general the following line: About 2 km. (1.2 miles) east of Champigneulle—Imecourt—Malmy. The woods north and east of Hill 214 were strongly held with machine guns. However, the troops of the 320th Infantry, after rifle fire delivered by a flanking company from the direction of Ruisseau de St. Georges, filtered through these woods, and during the night advanced through them and along an east and west line, 300 meters (327 yards) south of Alliepont.^{5, 3}

At 6 a. m. on November 2 the attack through the woods north of Imecourt and east of Verpel was successfully executed by the 319th Infantry. Practically no resistance was met, and there was but little artillery fire. Patrols of the division reached Verpel and Thenorgues, in advance of the 77th Division troops. The attack of the 317th Infantry, which had been placed at the disposal of the commanding general, 160th Brigade, and two battalions of the 320th Infantry in support, was delayed until 10.15 a. m., due to the fact that these troops were unable to get into position before this time. Shortly after noon the lines were reported north of Buzancy. The enemy was apparently retreating along the whole front. The 159th Brigade was ordered to move its remaining regiment (318th Infantry) to Sivry-les-Buzancy, where it arrived on the night of November 2-3, preparatory to a continuance of the advance by that brigade on the morning of November 3. The 160th Brigade, less two battalion of the 320th Infantry, after making certain that the left of the sector was secure, through the advance of the 77th Division, was assembled in the vicinity of Imecourt. By night the line of the attacking troops was approximately as follows: Midway between Buzancy and Bar on the Buzancy—Bar road, generally eastwardly to the vicinity of Ferme de Masmès.^{5, 3}

On November 3, the advance was continued, the 317th Infantry on the right of the sector. The 318th Infantry returned to Imecourt. The leading battalions advanced rapidly, encountering machine-gun fire, which was speedily overcome. At 2.30 p. m. the left battalion of the 317th Infantry was held up temporarily by heavy machine-gun fire from the woods southeast of Vaux-en-Dieulet and Cote 314. At the end of the day the division held the

line approximately as follows: From a point about 1 km. (0.6 mile) southeast of St. Pierremont to a point approximately 2 km. (1.2 miles) north of Fosse.^{5, 3}

On November 4 the advance continued at daybreak, with the left battalion of the 317th Infantry pushing vigorously forward, and at 10 a. m. had occupied Sommauthe, where it encountered some enemy resistance; this resistance increased to the north of the village. The 160th Brigade and 314th Machine Gun Battalions were moved to the vicinity of Buzancy. Throughout the remainder of the afternoon, strong enemy resistance was encountered. The right battalion of the 317th Infantry also advanced rapidly, and at 7 a. m. occupied Vaux-en-Dieulet. After being held up temporarily on the high ground just north of Vaux-en-Dieulet, the advance was continued to the northern edge of Bois de Four, where the battalion halted and reformed. The 318th Infantry, on the left, continued its advance over the open ground between Sommauthe and Oches. By night the general line of the division extended over a front of 6 km. (3.7 miles), approximately as follows: From a point about 3 km. (1.8 miles) east of Oches, just north of east for 6 km. (3.7 miles) into the southern portion of Bois du Port Gerache.^{5, 3}

On November 5 at 2.30 a. m. the right of the line was advanced rapidly, occupying Beaumont at 4.30 a. m., and the left battalion advanced at dawn after a short artillery preparation, and pushed rapidly forward to Thibaudine Ferme—Beaumont road, which it reached at 9 a. m. At 5 p. m. both battalions again advanced toward the Yoncq—Beaumont road, meeting heavy resistance. The 318th Infantry throughout the night of November 4–5 fought its way through Bois de St. Pierremont—Bois de la Berliere and Bois du Grand Dieulet, and by 9 a. m. had reached the Stonne—Beaumont road, just northwest of Warni Foret. By 6 p. m. the 318th Infantry had extended its line east, in liaison with the left of the 317th Infantry. Instructions for the relief of this division by the 1st Division were issued, and the objective to be reached during the night of November 5–6 was given as the Yoncq—Beaumont road, with patrols extending north into Bois d'Yoncq, on the left, and to the Meuse River, on the right. During the night of November 5–6, the four battalions continued to improve their lines north of the Stonne—Beaumont road, and early in the morning of the 6th, prior to the relief by the 1st Division, the objective as given was reached.⁵

On November 6 at 6.30 a. m. the 1st Division “leapfrogged” the forward elements of the 80th Division along the Yoncq—Beaumont road. After the relief of all units of the 80th Division, it was assembled in the vicinity of Sommauthe.⁵

MEDICAL DEPARTMENT ACTIVITIES

On November 1 the 317th Ambulance Company, at Baulny, assisted in the evacuation of divisional patients, its ambulances serving in front of the field hospitals and its two trucks evacuating the sitting wounded from them. On the 2d the company moved to Imecourt, on the 4th to Vaux, on the 8th to Buzancy, and on the 10th to Alzeville, where it was again employed in removal of patients.²²

Ambulance Company No. 318 assisted the triage (Field Hospital No. 318) at Baulny from November 1 to 3, and thereafter until November 11 operated a dressing station at Buzancy.²³

Ambulance Company No. 319 moved to Fleville on the night of October 30 and established a dressing station preparatory to the operation of November 1. Here approximately 350 casualties were cared for, and at Imecourt, where a dressing station was established by this company on November 2, 150 casualties were cared for. As the advance was very rapid, the next station opened on November 4, was located at Vaux, and on the 6th, others were established at Beaumont and Sommauthe. The company closed its stations on the



FIG. 84.—Ambulance Companies No. 317 and No. 318, 80th Division, at Vaux, Ardennes, November 6, 1918

7th and followed the division to Aubreville. There is no record available of the movements of Ambulance Company No. 320 other than that it participated in this operation.²⁴

Field Hospital No. 317 established a gas hospital at Baulny on November 1, working in conjunction with the gas hospital of the 2d Division. On the 3d it established a branch hospital for gassed cases at Imecourt, which continued in operation until the 6th. On that date it moved to Buzancy, where, until the 11th, it cared for gassed and sick, then moving to Aubreville.²⁵

Field Hospital No. 318 operated the divisional triage at Baulny from November 1 to 3 and from the 6th to the 10th at Buzancy, receiving 674 casualties at its former site and 841 at the latter.²⁵

Field Hospital No. 319, at first in reserve at Baulny, was in operation at Imecourt from November 3 to 6. While there it received 553 patients, then moved with other units of the train to Aubreville.²⁶ Field Hospital No. 320, at Baulny on November 1, received the sick, but moved next day to Imecourt, where it operated until November 5. The unit then moved to Buzancy, but did not establish its hospital, and on the 9th was withdrawn to Aubreville, after treating 285 patients in this phase of the operation.²²

THE 42D DIVISION^a

On November 1 the 2d Division of the Fifth Corps attacked through the lines of the 42d Division. The 42d Division, less the 67th Field Artillery Brigade, was then assembled in the vicinity of Sommerance, and passed to command of the Fifth Corps.²⁷

On November 2 the division moved to the vicinity of St. Juvin, in the First Corps reserve.²⁸

On November 3 the movement of the division was continued, and for the night it halted in the vicinity of Buzancy.²⁷

On November 4 the march was continued to the vicinity of Authenfontenoy. At midnight on the night of November 4-5, the division commenced to move forward to pass through the 78th Division and to take up the pursuit. At this time the enemy was in retreat and was fighting a rear-guard action. This action consisted mainly of machine-gun resistance which fell back from ridge to ridge, and of long-range artillery fire.²⁵

On November 5, at noon, the assaulting troops of the 42d Division passed through the 78th Division, on an east and west line, through the northern edge of Oches, and took up pursuit. At 9 p. m. the division front was along the northern edge of the Bois de Montdieu.²⁵

On November 6-7 the pursuit was continued. On the night of November 6, the line ran from east of Cheveuges to just north of Thelonne, thence to the vicinity of Aillicourt. Patrols of the division had reached the river to the northeast of Thelonne and the vicinity of Aillicourt and Remilly-sur-Meuse. At this time telephone and radio instructions were received from the First Army Corps to advance and capture Sedan, regardless of boundaries. The advance was attempted, but was held up by heavy machine-gun and artillery fire from across the river. A patrol of the 156th Infantry penetrated the southern edge of Wadelincourt, but was driven back by machine-gun fire. The 83d Brigade, on the left, was "pinched out" by the advance of the French, the 84th Brigade holding the division sector, in accordance with division orders. The line held on November 7 was approximately Pont-Mangis—Aillicourt.^{27, 3}

On November 8 the defensive organization of the line, as given above, was begun. Strong patrols were pushed well forward, and they determined that the enemy had withdrawn across the river and was holding the eastern bank of the Meuse in force.^{27, 3}

^a For map of activities of this division for this period, see Plate XLV.

On November 9 the 42d Division was relieved by the 77th Division, and was assembled in the area: Artaise-le-Vivier—La Besace—St. Pierremont—Tannay.²⁷

MEDICAL DEPARTMENT ACTIVITIES

The rapid advance to the lines had severely taxed men and animals, while ruined roads and destroyed bridges obstructed traffic. The battalion medical carts, still remaining, had to be abandoned, and the personnel had to carry on their persons the equipment necessary to open stations. Fortunately, casualties were few until November 7.²⁸

On November 4 the ambulance section entered Authe, and there Field Hospital No. 168 established a triage, Field Hospital No. 167 a gas hospital, and Field Hospital No. 165 was held in reserve. Field Hospital No. 168 opened at Briquenay.²⁸ The ambulance companies sent 16 litter bearers to each regiment and established contact with them through the liaison officers. The ambulance companies were now confronted by the most difficult problem they had been called upon to solve. The distance to army hospitals was very long, and between the battle line and Authe lay 0.25 km. (0.15 mile) of road so thoroughly mined by the enemy that it was necessary to make a detour over low, water-soaked ground which apparently was impassable to motor vehicles. An alternate route by St. Pierremont required a wide detour blocked by traffic.²⁹ Six animal-drawn ambulances dispatched at once to each Infantry brigade proved most valuable. On the morning of November 5, five motor ambulances were dragged across the swamp by horse-and-man power and then moved forward under their own power, making contact with the troops the same day. A station with a small personnel was established at each end of the destroyed stretch of road, and 20 men were detailed to carry patients across it to the rearward station where motor ambulances were parked. In advance of this bad break in the road there were a number of other less formidable obstructions encountered, chiefly those resulting from the destruction of numerous small bridges. On November 7 a relay station was established at Tanney and a collecting station at Chemery, to which the ambulances first gained access by running for some distance along a railroad track.³⁰

Casualties were now beginning to accumulate at Bulson and Chehery. With the animal-drawn ambulances and the few motor ambulances available, every effort was made to free the stations at these places. This work was promoted by the arrival of additional motor ambulances shortly after dark, which had finally been able to cross at Briulles via the partially completed corduroy road then being constructed by the Engineers. At Chemery, by 10 p. m., two buildings, previously used by the enemy as hospitals, were filled to overflowing by approximately 400 wounded, with but a small detail of 1 officer and 6 men to care for them. Meanwhile, the slightly wounded were being relayed back to Tannay with what ambulances could be spared from the front. Later a few empty ration trucks were obtained and somewhat relieved the congestion of wounded. Meanwhile Field Hospital No. 166 had moved forward to Tannay and was taking under its care the patients assembled

there.³⁰ At midnight an urgent call for help brought part of the personnel from this hospital to Chemery, and a few hours later, after Field Hospital No. 165 had reached Tannay, the remainder of the personnel belonging to Field Hospital No. 166 was released and went forward to Chemery. By daylight (November 8), operations had been begun on the more urgent cases. As soon as congestion at the front had been relieved, ambulances were immediately set to work on rearward evacuation, and by noon, November 8, the situation was well in hand. By the time the 42d Division was relieved, clearing of the field had been accomplished, not only for the division in question but also for those elements of the 1st Division which had been ordered up to participate in the capture of Sedan. When the 42d was directed to leave the area, there followed another 48 hours of continuous work for the ambulances evacuating from the field hospitals to Cheppy.³¹

In this action, the ambulance section accomplished the stupendous task of transporting 1,422 casualties, an average of 60 km. (37 miles), to mobile hospitals in the rear over many stretches of well-nigh impassable road and through difficult traffic blocks. Yet the average time required to transport wounded to a place where surgical intervention could be obtained far exceeded the "eight-hour rule."³²

As the division moved forward into the lines, the field hospitals were ordered to Authe, but Field Hospital No. 168, delayed by road congestion, was later ordered to establish itself in an old German hospital at Briquenay. At Authe, Field Hospital No. 166 opened a temporary triage, and Field Hospital No. 167 prepared to receive gassed cases, but as the line advanced rapidly and but few casualties were received, the Field Hospitals No. 166 and No. 165 moved to Tannay. The unit which arrived there first (No. 166) then moved, during the night of November 7-8, by sections up to the ambulance collecting station at Chemery as has been described above. Here many wounded were operated throughout the 9th, and relayed back through the other field hospitals at Tannay, Authe, and Briquenay, to the mobile hospital at Cheppy. The divisional units continued to operate at these points until all patients had been evacuated, though not without great difficulty. Coincident with the cessation of hostilities the field hospital section assembled at Authe. While on a number of previous occasions they had served much more easily a larger number of patients, it was only because of the rapidity with which they had followed up the advance that they were able to meet the demands imposed.³²

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- (10) Report of Medical Department activities, 78th Division, A. E. F., prepared under the direction of the division surgeon, 78th Division, undated, Part II, 5. On file, Historical Division, S. G. O.
- (11) *Ibid.*, Part II, 28.
- (12) Report of operations, 153d Infantry Brigade, Meuse-Argonne operation, November 19, 1918.
- (13) F. O. No. 68, 77th Division, November 8, 1918.
- (14) F. O. No. 69, 77th Division, November 9, 1918.
- (15) Report of Medical Department activities, 77th Division, A. E. F., prepared under the direction of the division surgeon, 77th Division, undated, 46. On file, Historical Division, S. G. O.
- (16) *Ibid.*, 47.
- (17) *Ibid.*, 49.
- (18) *Ibid.*, 45.
- (19) *Ibid.*, 48.
- (20) *Ibid.*, 43.
- (21) *Ibid.*, 7.
- (22) Report of Medical Department activities, 80th Division, prepared under the direction of the division surgeon, 80th Division, undated, Part I, 13. On file, Historical Division, S. G. O.
- (23) *Ibid.*, Part I, 14.
- (24) *Ibid.*, Part I, 15.
- (25) *Ibid.*, Part I, 11.
- (26) *Ibid.*, Part I, 12.
- (27) Reports on operations, 42d Division, Meuse-Argonne operation, November 22, 1918.
- (28) Report of Medical Department activities, 42d Division, A. E. F., prepared under the direction of the division surgeon, 42d Division, undated, Part I, 81. On file, Historical Division, S. G. O.
- (29) *Ibid.*, Part I, 60.
- (30) *Ibid.*, Part I, 61.
- (31) *Ibid.*, Part I, 62.
- (32) *Ibid.*, Part I, 82.

CHAPTER XXXI

THIRD PHASE—Continued

FIFTH CORPS

On November 1, after two hours' artillery preparation, the corps attack started at 5.30 a. m., under an effective barrage, the 2d and 89th Divisions in line and the 1st Division in reserve. The mission of the Fifth Corps was to seize the ridge of the Bois de Barricourt and the heights northeast of Bayonville-et-Chennery. Meeting with but little resistance, both divisions advanced during the day from the line running approximately along the northern edge of Bois de Bantheville—north of the Cote de Chatillon—south of Landres-et-St. Georges, to the third objective, which was the line La Tuileries, north edge of Bois de Barricourt, north of Margenta Ferme, north of Cote 313, southern part of Bois de la Folie, to Ferme des Parades.^{1, 2}

On the morning of November 2 strong detachments were pushed forward, the 89th Division encountering stiff machine-gun resistance. Barricourt was taken by the 89th Division, and the 2d Division made steady progress. Steady progress was likewise made in the afternoon. The front line at the end of the day was somewhat indefinite. It was, however, approximately as follows: From left to right: Tailly, south to Nouart, thence north to the exploitation line, thence along the exploitation line to the corps boundary (the exploitation line being approximately Buzancy—Ferme de Masmès—Barricourt—just west of Villers-devant-Dun).^{1, 2, 3}

On November 3 the advance was continued, the mission of the Fifth Corps for this day being to secure the heights overlooking Vauclaire—Champy Haut—Vaux-en-Dieulet. The 89th Division, after securing a portion of the heights on its front, was to push strong reconnaissances toward Stenay. The 2d Division was ordered to assist the advance of the First Corps by securing the ridge southeast of Vaux-en-Dieulet, and to push strong patrols toward Beaumont. At the end of the day the line reached was approximately from Vaux to Champy Haut, thence along the heights southwest of Vauclaire.^{2, 4}

The mission of the Fifth Corps on November 4 was to advance on Beaumont and Laneuville. The 1st Division (less one regiment of Infantry and one battalion of Field Artillery) was to move at daylight by way of Bayonville—Bauclaire—Laneuville road. The 2d and 89th Divisions were ordered assembled, after the passage of the 1st Division, in their present forward areas, to be ready to march upon receipt of orders. Both columns of the 1st Division were ordered to seize all standing bridges over the Meuse and make the necessary arrangements for suitable crossing of the river. They were to seize and hold the west bank of the Meuse from Laneuville to Beaumont, both inclusive. At the end of the day the line reached was approximately as follows: That of the 2d Division, from just south of Petit Forêt Ferme, extending about 1 km. (0.6 mile) east and west of that point, then

south of Ferme de Bille Tour to the northern edge of the woods. The 89th Division had patrols in Laneuville, then south of the Laneuville—Beaumont road. Because of the progress made by the 2d and 89th Divisions, the orders pertaining to the 1st Division were held up, this division remaining in the vicinity of Bois de Jaulnay and Fosse.²

On November 5 the plans for the Fifth Corps were the seizure of the bridgehead in the vicinity of Beaumont. The 2d Division was to seize this bridgehead and to push strong patrols east and west. The 1st Division was ordered to assemble in the rear of the 2d Division and to await further orders. At the end of the day the line was practically as follows: Laneuville, due north through Cesse—Luzy—to a point on the west bank of the river opposite Inor, with patrols toward Inor and Pouilly; along the heights east of Beaumont and running north of Beaumont.²

On November 6 the Fifth Corps was ordered to seize and hold the heights east of the Meuse, extending its left to include Mouzon. The 1st Division was directed to move through and on the left of the 2d Division and through the 89th Division in the direction of Yoncq—Mouzon; to establish and maintain liaison with the First Corps and with the 2d Division on its right, and to seize a crossing at Mouzon. The 2d Division was to hold the heights east of the Meuse opposite Beaumont and to protect the right flank of the 1st Division. The 89th Division was to hold the heights east of the Meuse on its present front, at the same time to reorganize in preparation for an advance to the north. At the end of the day the 89th Division had entirely cleared the western bank of the Meuse, from Laneuville to Pouilly, and reported patrols in Pouilly. Elements of the 1st Division occupied Villemonty. The 2d Division occupied the west bank of the Meuse within its zone of action.²

On November 7 the Fifth Corps continued its present mission. The 1st Division was to continue its advance north toward Mouzon, the 2d Division was to push forward on the right of the 1st Division and the 89th Division was to cover the front of the Meuse from Stenay northward, protecting the right flank of the advance. Strong reconnaissances were to be pushed across the Meuse, and the 89th Division was to be prepared to follow the advance. During the day, patrols from the 2d and 89th Divisions were active along the river. Crossings were reconnoitered, patrols entered Pouilly, there encountering rifle and machine-gun fire, and were reported to have reached Martincourt. The 1st Division reported that they had taken Autrecourt. This division continued to push ahead in a northwesterly direction west of the Meuse during the night of November 6-7, and, during the 7th, advanced and gained the heights just south of Sedan. At the end of the day the 89th and 2d Divisions held the west bank of the Meuse from Laneuville to Mouzon, with patrols across the river at Pouilly. The 1st Division was continuing its advance toward Sedan.²

On November 8 the mission of the Fifth Corps was to hold the west bank of the Meuse within the corps sector. The 89th Division was ordered to hold the front from Laneuville (inclusive) to Letanne (exclusive). The 2d Division was to hold the front from Letanne (inclusive) to Mouzon (inclusive). Both divisions were to push strong patrols across the Meuse to

maintain contact with the enemy. The 1st Division was ordered assembled in the area Vaux-en-Dieulet—Chateau de Belval, there to await further orders. At the end of the day the corps front line remained along the west bank of the Meuse from Stenay to Mouzon and was held by the 2d and 89th Divisions. The 1st Division was assembling in the vicinity of Vaux-en-Dieulet.²

On November 9 there was no change in the mission of the Fifth Corps for the day. The 2d and 89th Divisions continued to hold the west bank of the Meuse and to make preparations for effecting a crossing.²

On November 10, at 6 a. m., the Fifth Corps took over the First Corps front. The 77th Division, First Corps, had relieved the 42d Division and was now holding the entire First Corps front. This front was to be eventually taken over by the French Ninth Corps, which was then holding the sector on the left of the 77th Division. The Fifth Corps was ordered to cross the Meuse and seize the heights southeast of Vaux and east of Inor. The 2d Division was ordered to cross the Meuse at places already selected by the division commander, and to seize the heights east of Mouzon and southeast of Vaux. The 89th Division was to cross the Meuse at places already selected and to seize the heights east and northeast of Inor. At the end of the day, the Fifth Corps had three divisions in line, the 89th on the right, the 2d in the center, and the 77th on the left. The line extended along the west bank of the river from Stenay to Pont-Maugis. The 2d and 89th Divisions were making preparation to effect crossings of the river during the night. The 1st and 42d Divisions were awaiting orders for a movement to the Third Corps area. The 77th Division continued to hold its front on the west bank of the Meuse.²

On the night of November 10–11 the 2d and 89th Divisions, under effective artillery and machine-gun fire, successfully completed the crossing of the Meuse. On the morning of November 11, Pouilly was reported captured at 4.30 a. m. Every effort was made to put across two bridges in the vicinity of Mouzon, but this was unsuccessful owing to heavy machine-gun and artillery fire. Attempts made in the vicinity of Bois de l'Hospice were successful, however, and crossings were made here by troops from both the 2d and 89th Divisions. At 8.30 a. m. notification was received from the First Army that the armistice had been signed, effective at 11 a. m. November 11. At 11 a. m. the location of the front-line elements of the divisions in the sector was approximately as follows: From the eastern side of Stenay westward to the first bend of the Meuse north of Stenay, thence west of north to a point approximately 1 km. (0.6 mile) northeast of Autreville, thence westwardly to just southwest of Ferme de Vignerons, thence north and west to southwest of Mouzon, thence along the Meuse to Pont-Maugis.^{2, 3}

MEDICAL DEPARTMENT ACTIVITIES

The following plan of evacuations was published by the corps surgeon on October 25, 1918:⁵

EVACUATION OF SICK AND WOUNDED

1. *Organization.*—Field hospitals for triage, gassed and sick: 89th Division now established about 1 k. NE. of Charpentry. This site will be occupied by the field hospitals

of First Division when the division goes in; if conditions permit, the establishment will be placed at La Grange-aux-Bois Ferme. Second Division will establish triage about 1 k. SW. Exermont. Field hospitals for gassed and sick and for nontransportable cases of 2d and 89th Divisions will be established on road running south from Charpentry, about $\frac{1}{2}$ k. from junction of that road with main road (Baulny—Varennnes).

2. *Evacuations.*—Same as in previous orders, except that Mobile Hospital No. 6, about $\frac{1}{2}$ k. W. of Cheppy, will be used in conjunction with 1st Corps for operable, severely wounded.

At the urgent insistence of the corps surgeon, Field Hospital No. 42 joined the corps train on November 1, and on the next day Field Hospital No. 339. Both of these units were located 1 km. (0.6 mile) south of Very. United States Army Ambulance Service Section No. 590 reported for duty with the corps on November 2, and Field Hospital No. 338 on the 3d. The last mentioned was located near Mobile Hospital No. 8, established November 3 1 km. (0.6 mile) southwest of Exermont. As the 2d Division advanced, its triage was moved to Landreville, and later to Beaumont, and its surgical hospital to the former place. The 89th Division advanced its triage to within 1 km. (0.6 mile) north of Nouart, where it was joined later by the other hospitals of that division. The 1st Division did not locate at any point for a long period, and no reports of locations were received from it until after the armistice.⁶

Collecting points were designated at Field Hospital No. 338 and at La Grange-aux-Bois Ferme, to which point Field Hospital No. 339 was moved on November 6. Divisions were directed to send their patients to these points, whence evacuation ambulance companies would transfer them to the rear, but as the haul which this plan required was too long, Evacuation Hospital No. 14 was moved up to Varennes on the 6th. Thereafter one ambulance company of the corps train was sent forward daily to the triages of the 2d and 89th Divisions.⁷

The Medical Department labored under the great disadvantage, common to all branches of the service, of lack of transportation. No division entered the corps with full quota of ambulances, with anything approaching the allowance of trucks for field hospitals, or with motor cycles or motor cars. The sanitary train (four field hospitals and four ambulance companies) allowed by Tables of Organization to a corps was lacking, except that three field hospitals reported the first part of November, entirely without transportation at first and with no cots, stoves, extra blankets, or tents for officers. The corps surgeon reported as follows:⁷

Had this sanitary train been available from the beginning it is believed that a number of lives would have been saved. In each regular ambulance company there are from 60 to 80 men available as litter bearers in addition to the drivers and orderlies on the ambulances, while in an evacuation ambulance company there are only 32 men. Further, the four field hospitals could have been drawn upon for personnel and transportation and could have relieved divisions of their sick.

The great defect in the Medical Department organization in the divisions was the lack of litter bearers in the front line.⁷

In a supplementary report, dated December 5, 1918, the corps surgeon reported as follows concerning the evacuation service of the corps and its component divisions:^{7, 8}

The battalion aid station was near its battalion command post in a dugout or other sheltered spot, as near the front lines as possible. Here were located all available medical officers with dressing parties and litter bearers. The regimental surgeon with a small force was at the regimental aid station and had general supervision over regimental aid and evacuation. Casualties from battalion aid stations did not necessarily pass through regimental aid stations.

DRESSING STATIONS

Main dressing stations were established at each ambulance company headquarters at convenient, central, sheltered spots. Wounded men passed through these stations, were examined and given hot drinks, but were not unloaded unless it was necessary to do so in order to check hemorrhage or to revive from profound shock. These companies also assisted the regimental personnel to establish advance dressing stations at, or as near as possible to, battalion aid stations, re-dressed or readjusted dressings, administered antitetanic serum when necessary, gave hot drinks and other nourishment. Ambulance company litter bearers were concentrated at these advance stations to assist in bringing in the disabled. Service at these stations was usually satisfactory, but a few cases were reported where tourniquets were too tightly applied or were left too long in place, where splints were not applied, or antitetanic serum was not given.⁸

The greatest difficulty in the evacuation of the wounded was that of transporting them to an aid station within a reasonable time after their wounds had been received. This condition was due to the lack of litter bearers and the distance to be covered, especially when the advance was rapid and the terrain hilly and wooded. The corps surgeon had foreseen this shortage, but his request to have 200 litter bearers assigned to each division was not approved.⁸

FIELD HOSPITALS

In general it was found best to have the four field hospitals of a division located together; one to act as a triage and to care for surgical and shock cases, one for gassed patients, one for the sick, and one in reserve. In but few instances was it found necessary to modify this plan.⁹

The question whether the triage should be operated by an ambulance company or a field hospital came up early in the course of operations and was settled in favor of the latter. This conclusion was deduced from the need that every available man in an ambulance company perform litter-bearer duty and the desirability of having, in conjunction with the triage, facilities for the care of nontransportable and shocked patients. All casualties, with the exception of gassed patients, were passed through the triage and carried from it by litter to tents designated for nontransportables, slightly wounded, severely wounded, or sick. The great majority of the divisions operating in

the corps were found to be poorly organized for this class of work, the tendency being to devote an undue amount of energy to surgical interference and to neglect triage service and the treatment of shocked cases. This was controlled by insistence that a medical officer be designated at each triage to have entire charge of sorting and loading patients for evacuation; that only emergency surgery be performed at these locations (this had to be modified in certain cases); and that a shock team be organized and instructed.⁹

In order to prevent the possibility of other patients becoming gassed from contact with them, gassed patients were delivered by the ambulances directly to the division gas hospital. Their records were made here and were consolidated with those of the triage. All cases of this character were examined and classified by a medical officer, their clothing removed, and baths given. Suspected malingerers and those who were slightly gassed or exhausted were held under observation for 24 hours with a view to their return to duty. In order to make this procedure possible, a supply of clothing was maintained at this hospital. In the early stages of its operations the corps gas hospital was overwhelmed with patients, many of them but slightly gassed, some not at all; but as soon as the foregoing plan could be put into effect this condition was relieved, and a large number of cases were returned to duty from the divisional gas hospitals.⁹

When the Fifth Corps entered the Argonne sector the 79th Division and, to a less degree, the 37th and 91st were experiencing considerable losses from the epidemic of influenza. Most of the sick were being evacuated to Souilly, where it was reported that many men developed pneumonia, with a high death rate. To care for these patients with as little exposure as possible, the 32d Division, in reserve, was directed to establish at Ville-sur-Consances a field hospital for the sick of the corps.⁹ This hospital received several hundred cases during one week, with a decided decrease in the pneumonia and fatality rates. But as the 32d went into line on October 3, it was necessary to discontinue the service of this hospital; and although every effort was made to secure another for this purpose, none became available until Field Hospital No. 42 arrived on November 1.⁹

Orders were then issued directing that each division establish a field hospital to care for its own sick and retain influenza and pneumonia patients and all slightly ill, evacuating only other cases and those which threatened to become more or less chronic. Because of the frequent movement of divisions this method was not given a thorough test; but whenever it was possible to apply it, especially in the 32d and 42d Divisions, the results were extremely satisfactory, saving a large number of men for the front lines and reducing the number of cases of serious illness.¹⁰

At the beginning of the Meuse-Argonne operation there were attached to the corps 4 United States Army Ambulance Service sections and 2 French sections, giving a total of 85 ambulances. Of these there were generally available 90 per cent of the United States Army vehicles and 70 per cent of the French.¹⁰

There was great demand for ambulances for independent organizations of the corps, such as Artillery, Engineer, and pioneer Regiments. Ten ambulances, therefore, were distributed among these organizations; but, considering the shortage of these vehicles, this was a mistake, as experience proved, and later the ambulances were returned to their organizations.¹⁰

As ambulances of the United States Ambulance Service were provided with substitute drivers, these organizations were assigned to divisions to evacuate their field hospitals. With the French ambulance units the arrangements made were somewhat different, chiefly because their service allowed but one driver to a vehicle. These ambulances were sent out early in the morning and made one trip daily, which often carried them into the night.¹⁰

Had our line remained stationary along the line existing at the commencement of the operation, the allowance of ambulances would have been sufficient for all purposes, as the haul to the nearest evacuation hospital, at Froidos, was not long and roads were excellent; but on the day that the triages moved forward from Brabant to Les Clairs Chenes trouble began. Division surgeons had been informed that they would be held responsible for transporting casualties to their field hospitals and that the corps would evacuate from these points; but during the first few days it was almost impossible to get ambulances through to Malancourt, Vauquois, or beyond Avocourt, on account of the bad condition of roads and the blocking of traffic. Maps which had been furnished the ambulance companies were incorrect in some instances, and there was great confusion in routing. About October 4 (second phase) it was possible to shift the corps evacuation route to the Very—Cheppy—Varennes road, which was in fairly good condition; but the haul was very long—Very to Froidos, 26 km. (16 miles), to Fleury-sur-Aire, 32 km. (19.8 miles), and to Vaubecourt, 46 km. (28.5 miles), and roads were congested so that frequently it required 12 to 24 hours to make the round trip.¹⁰ There was also great difficulty in obtaining spare parts for the vehicles, and an ambulance might be laid up for days for the lack of a spark plug or some small part of a motor. An ambulance repair shop was located at Triaucourt, but only the simplest repairs could be made there, and it was necessary to scour the country for spare parts—often unsuccessfully, though quest was made in Souilly, Bar-le-Duc, Sampigny, and even Langres. During operations there were some losses by theft, several tires and rims and two motor cycles complete being taken from corps medical organizations.¹¹

During the early days of the operation considerable confusion existed in the delivery of patients to evacuation hospitals. Officers in charge of triages apparently failed to appreciate the importance of careful sorting and would, for instance, direct a driver to proceed to Froidos with his load of patients, though there might be among them sick who should have been sent to Vaubecourt and gassed who should have gone to Julvecourt. Moreover, drivers did not always report where they were sent; apparently being treated better at some hospitals than at others. Fleury-sur-Aire was the favorite destination, and drivers frequently delivered every class of cases at this point.

Also, as the First Corps used the same road as the Fifth, and occasionally evacuated large numbers of patients to Froidos and Fleury-sur-Aire, both of these hospitals sometimes were filled, and orders were received at night that patients be diverted to Villers-Daucourt or Brizeaux or Souilly. Lacking telephone connection with triages, the only course open to the corps evacuation officer was to notify the military police to route ambulances accordingly or to send a representative to do so at the crossroads at Clermont.¹¹

Trucks were used by the divisions for the evacuation of wounded and gassed from the front to triages, and even to the rear of them in many cases. Though section G-1 of the corps staff cooperated constantly with the corps surgeon, he was unable to furnish corps trucks to assist in evacuation, because of the shortage of such vehicles in the corps train, the enormous amounts of ammunition to be hauled by such as were available, and the fact that the corps supply and ammunition dumps invariably were forward of evacuation hospitals.

As the corps was a tactical unit, routine reports from divisions did not necessarily pass through the corps surgeon's office, but certain information was necessary for that office, and so the reports listed below were required. The requirements were made as simple and brief as possible in order not to overburden the division surgeons, the corps surgeon having had considerable experience in that capacity and appreciating the difficulties of getting out complicated reports during the heat of action. There were many other points of interest which might have been included, such as the number of killed, slightly and severely wounded, number of gassed cases, and sick returned directly to duty from divisional hospitals, etc.¹¹

The daily casualty report was, of course, the most important and was in fact apparently the only reliable report of the corps so far as "Wounded, other injuries, gassed, and sick" were concerned. When complete, as was usually the case, it showed the total number of admissions to medical organizations of the corps.¹¹

Reports required were as follows:

Immediately upon joining the corps—1. Numerical list of medical personnel and transportation. 2. Roster of medical officers, including specialists, dental, sanitary corps, and veterinary officers.

Daily—1. Casualty report.

Weekly—1. Personnel and transportation (copy of Form 9, A. G. O. S. D.). 2. Contagious diseases for the allied commander. 3. Venereal, giving name, rank, organization, and number of each new case.

Reports from nondivisional corps troops:

Daily—Casualties and changes, adding number of cases evacuated directly to evacuation hospitals.¹²

THE 2D DIVISION

On the night of October 31, the 2d Division, which had been in the Fifth Corps reserve, relieved the 42d Division in line south of St. Georges, and at 5.30 on the morning of November 1, launched its attack on a 4-km. (2.4-mile) front.¹³

The plan of action was to attack in a northerly direction within the sector. The reduction of the enemy strong positions in and around Landres-et-St. Georges, the Bois des Hazois, and the Bois de l'Epasse, was made the mission of the 23d Infantry (3d Brigade), which regiment was to attack on a 2-km. (1.2-mile) front on the right. Following the capture of the areas assigned it, the 23d Infantry was to pass to the division reserve. The remainder of the division front, on the left, was given to the 4th Brigade. This brigade, upon arriving at the level of Imecourt, was to be extended so as to cover the entire front of the division, thus replacing the 23d Infantry, on the right.¹³

The attack advanced in accordance with scheduled arrangements. Upon arrival at the third objective (La Folarde—La Magenta Ferme—Cote 313—Fontaine des Parades), the position was consolidated and patrols were pushed forward to the exploitation line (Nouart—Fosse). The 89th Division, on the right of the 2d Division, reached the corps objective on November 1. The 80th Division (First Corps), on the left of the 2d Division, was unable to advance to its objective. This caused the left flank of the 2d Division to be exposed to attack from the direction of Sivry-les-Buzancy and Buzancy. The 4th Brigade was therefore ordered to seize and hold with its rear elements the woods north and west of Sivry-les-Buzancy, and the 3d Brigade to place itself in position to resist any counterattacks which the enemy might make on the left flank of the division.¹³

On November 2 the division began a movement which involved a change of its front and an attack in the direction of Buzancy. In the afternoon, however, corps orders changing this plan were received, stopping the movement. This change in plans was caused by the refusal of the First Corps and the 80th Division to change their plans and permit the Fifth Corps to attack diagonally across their front, in the direction of Buzancy. The 4th Brigade was relieved in the front line by the 3d Brigade. Due to the change of orders and the time necessary for the relief of the first line of the division by the 3d Brigade, it was decided to make the advance to the exploitation line, Nouart—Fosse, during the night of November 2-3. This was successfully accomplished, and the exploitation line was occupied during the night by the 3d Brigade.¹³

On November 3 the 3d Brigade leading, with its regiments abreast, attacked from the line of departure, Nouart—Fosse. At 6 a. m. they advanced to and occupied the ridge southeast of Vaux-en-Dieulet by 8.30 a. m. In this advance the troops were subject to heavy artillery and machine-gun fire and suffered many casualties. In the position gained it was discovered that the line was confronted by strong enemy positions along the southern edge of Bois de Belval. Division orders were then issued, directing the division to advance, the 3d Brigade being ordered to attack and dislodge the enemy from his position in its front, and to move up through the woods, during the night, and occupy a commanding position in the vicinity of Beaumont. The advance was made as directed. The division, after an artillery preparation of about one hour, advanced and occupied, late in the afternoon, the enemy position above referred to. This being a night operation, the 3d Brigade, supported

by accompanying artillery, pushed forward by a single road and passed through the Bois de Belval, Bois de Four, and Bois du Port Gerache, and debouched into the open. The heights north of La Tuilerie Ferme, south of Beaumont, 6 km. (3.7 miles) behind the enemy's main line of resistance, in front of the divisions on the flanks of the 2d Division, were reached by 11.30 p. m. on November 3. By the morning of November 4 a strong position had been built up north and east of La Tuilerie Ferme. This advance through the woods was made by a single road and with the troops in column of twos.¹

November 4 was spent in building up, with the 3d Brigade and 15th Field Artillery, a strong position northeast of La Tuilerie Ferme, and preparations were made to advance to the bank of the Meuse on the night of November 4-5.¹²

After darkness on the night of November 4-5, the 3d Brigade again advanced and, passing by the outskirts of Beaumont, reached by daybreak, November 5, the town of Letanne, and the Bois de la Vache, which places were occupied, together with the trenches between them. The bank of the Meuse, within the elements of the division, was cleared of the enemy. After daybreak, a detachment from the 23d Infantry was sent into Beaumont to complete the capture of that place and to occupy it.¹³

On November 5 the 5th Regiment of Marines completed the capture of Forêt de Jaulnay and reconnoitered the destroyed bridges at Pouilly and Inor. One battalion of the 89th Division assisted in these operations.¹³

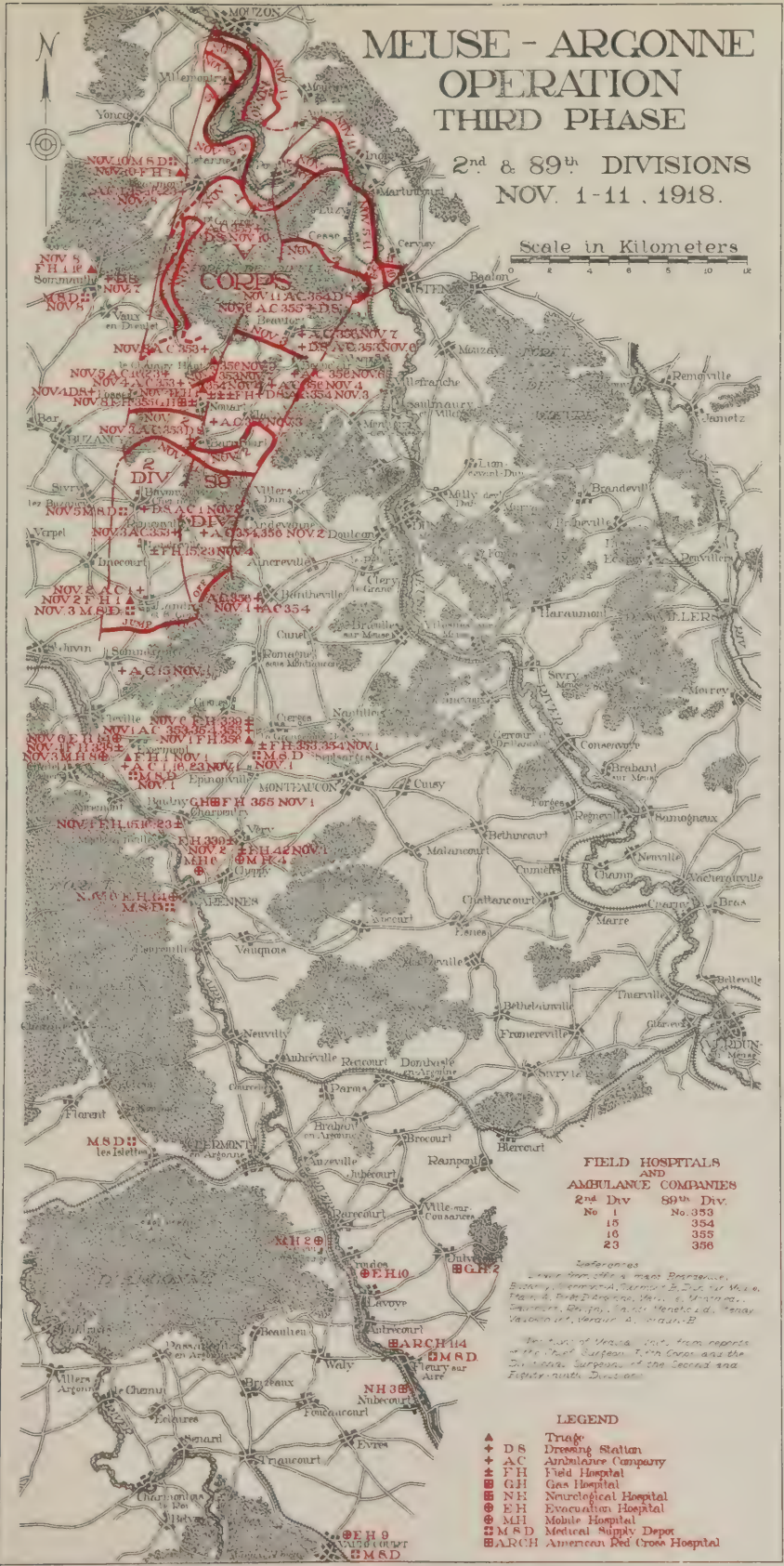
During the night of November 5-6, information was received that the 1st Division was to pass through the 80th Division, which, at that time, occupied the line Beaumont—La Thibaudine Ferme, and was to march on Mouzon. The Fifth Corps directed the 2d Division to assist in these operations and to protect the right flank of the 1st Division during its march toward Mouzon. In the 2d Division, the 3d Brigade was given this mission.¹³

On November 6 corps orders were issued directing the assembly of the 2d Division, preparatory to marching on Sedan. However, early in the morning of November 7, these orders to march northward were countermanded and the 2d Division was directed to hold the line of the Meuse on the front Letanne—Mouzon. The 3d Brigade organized and occupied the front line and continued reconnoitering the river crossings. The 4th Brigade was moved up and was bivouacked along Beaumont—Sommauthe road, about 3 km. (1.8 miles) southwest of Beaumont.¹³

November 8 was spent in improving positions and in searching for bridge material.¹³

On November 9 the division was directed to cross the river at 6 p. m. that day, but owing to the difficulty experienced in securing bridge material the orders were changed and the crossings postponed.¹³

After dark, on November 10, the 2d Engineers threw two improvised foot-bridges across the Meuse near Bois de l'Hospice, and the 4th Brigade, in the face of very heavy machine-gun and artillery fire, succeeded in putting two battalions of the 5th Marines, plus two machine-gun companies, across the river. A battalion of the 89th Division, which had been placed under the command of the commanding general, 4th Brigade, for combat liaison with



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

the 89th Division, crossed at the same time, following the 5th Marines. The crossing north of Mouzon was abandoned because of the success which attended the crossing at the other place. The 3d Brigade and all the division machine guns assisted in this operation, and one battalion of the 9th Infantry was, about dawn, November 11, pushed over in support of the 5th Marines.¹³

During the early morning hours of November 11, the enemy was driven from Bois des Flaviers and a bridgehead was established which included Warmonterne Ferme, Bellefontaine Ferme, and Senegal Ferme. Liaison with the 89th Division was established near Vignerons Ferme. This operation lasted until 11 a. m. November 11, at which time the armistice with the enemy went into effect.¹³

MEDICAL DEPARTMENT ACTIVITIES

About October 27 all the units of the sanitary train were in place and ready for the operation. The triage (Field Hospital No. 1) and the medical supply unit was located behind camouflaged screens in a field 1.5 km. (0.9 mile) southwest of Exermont and 6.5 km. (4 miles) from the lines, as the ground here was soft, stone roads had to be built to prevent miring of transportation.¹⁴ Tentage was not erected until the night of the attack, for the location was within sight of enemy observation balloons. Field Hospital No. 16 for sick and gassed patients, and Field Hospitals No. 15 and No. 23 (combined), for nontransportable wounded, were located 0.5 km. (0.3 mile) south of Charpentry. Ambulance Companies No. 1, No. 16, and No. 23 occupied shelter tents in a small valley near the triage. Casualties from the division were to be removed to Evacuation Hospital No. 10, at Froidos; Red Cross Hospital No. 114, at Fleury; Evacuation Hospital No. 14, at Les Islettes; and Mobile Hospital No. 6, near Varennes. The distance from front lines to these units varied from 11.5 km. (7.1 miles) to 39.6 km. (24.5 miles).¹⁴

By the night of October 31, officers and men of the litter-bearer sections of the ambulance companies had joined the battalions they were to serve, and a dressing station, well stocked with supplies, had been established by Ambulance Company No. 15, at Sommerance, with United States Army Ambulance Service Section No. 556, standing by in readiness for service.¹⁴

Because of the rapid advance, the dressing stations moved forward almost daily. Two were operating at Sommerance and one at Landres-et-St. Georges on the night of November 1, one at Bayonville on the afternoon of November 2, two at Nouart November 3, one at Fosse on November 4, two at Sommauthe on November 7, and all four dressing stations were located at Beaumont November 8 to 10, functioning as a triage and as a hospital for minor cases of sickness.¹⁴ The field hospitals moved in echelon formation, leaving when they moved forward a group in the rear to care for sick and wounded left behind until they were evacuated. Field Hospital No. 1 was at Exermont November 1-2; at Landres-et-St. Georges, 8 km. (4.9 miles) from the front line, November 2-3; Nouart 6 km. (3.7 miles) November 4 to 7; Sommauthe 9 km. (5.5 miles) November 8-9; Beaumont 2 km. (1.2 miles) November 10.

The surgical unit, composed of Field Hospitals No. 15 and No. 23 and Mobile Surgical Unit No. 3, moved to Landreville, 15 km. (9.3 miles) from the line on November 4. Field Hospital No. 16 moved to Sommauthe on November 5 and to Beaumont on the 12th.¹⁵

The problem of evacuating casualties soon became a very serious one. Roads, which at first were fairly good, were soon almost impassable. The G. M. C. ambulances of the sanitary train were reduced to 25, and the train was further hampered at first by the temporary loss of 12 drivers who had been sent to Marseille on November 1 to bring up 12 new G. M. C. ambulances. Twenty additional Ford ambulances belonging to a United States Army Ambulance Service section reinforced the train, but these machines, formerly considered equal to almost any road condition, were unable to endure the strain imposed by deep, sticky mud. In the first five days much travel at low gears had so worn their transmissions that the section in question was practically out of service, except that a few vehicles were kept in condition for evacuating patients to the rear. The G. M. C. ambulances, with chains, and the "Commerce" machine-gun trucks which came to the assistance of the Medical Department, were the only cars that could operate under the road conditions in the forward area. Arrival of the convoy of 12 G. M. C. ambulances from Marseille on November 7 aided greatly in the work of evacuation.¹⁵

In short hauls from the forward area mule-drawn ambulances were very useful, but the two-mule teams were soon exhausted. It was considered doubtful whether four-mule teams could have held out much longer. Sanitary and supply train trucks assisted greatly in rear evacuation. Those of the supply train reported at the triage after leaving their rations and supplies; but, because of extremely bad roads and the long hauls back to the hospitals at Fleury and Froidos, could not make a round trip inside of 24 hours. It became necessary therefore to forbid by orders their going farther than to evacuation hospitals. These, however, were unable to keep up with the advance, and often, after extremely long hauls, the trucks found them overflowing, and so were obliged to proceed still farther to the rear.¹⁵

At Nouart, the 1st Division supplied several ambulances for rear evacuation, when not actually needed for use in the forward area. The establishment of Mobile Hospital No. 8 at Exermont shortened the haul for nontransportable patients for whom the surgical units of Field Hospitals No. 15 and No. 23 could not care; but much of the time it was filled to its utmost capacity. The extremely bad weather, fatigue, and lack of food in the lines conspired to cause much sickness. At one time the 16th Field Hospital, at Sommauthe, had 1,100 patients under canvas and in billets in that town, most of them suffering from influenza or diarrhea.¹⁶

With the establishment of one-way routes, patrolled by caterpillar tractors day and night to pull mired trucks and ambulances onto the road, traffic was kept moving; slowly, it is true, but under road conditions that ordinarily would have been impossible.¹⁶

In this engagement, as in a previous one, a supply officer was given the special task of keeping dressing stations supplied and rationed with hot food until kitchens could be brought up. The plan worked well.¹⁶

In addition to the transportation problems, already difficult enough, when Sommanthe was reached about 1,600 refugees, some seriously wounded, had to be evacuated to Harricourt, near Buzancy. Trucks of the sanitary train (some were temporarily out of commission) were unable to meet the needs of the ever-increasing number of arrivals. In this emergency the returning supply train trucks of the 1st Division were put at the disposal of the division surgeon, 2d Division, and soon all these unfortunates were sent safely to the rear.¹⁶

When the armistice went into effect the sanitary train was disposed as follows: Headquarters and headquarters of its hospital section with Field Hospitals No. 15 and No. 23, to which Mobile Surgical Unit No. 3 was attached, were at Landreville; Field Hospital No. 1, the triage, medical supply unit, and all the ambulance companies, with their dressing stations in operation, were at Beaumont; while Field Hospital No. 16 was at Sommanthe caring for some 800 sick patients.¹⁶

Throughout this operation the triage had been advanced frequently, with a view to reducing the time of admission after receipt of wounded—a procedure which the division surgeon reported had doubtless saved many lives. On the morning of November 1, when 6.5 km. (4 miles) from the line, it received 316 cases within an average of 1 hour and 33 minutes from the moment a patient's diagnosis tag was affixed.

THE 89TH DIVISION ^a

On November 1, at 5.30 a. m., the 89th Division attacked, with the 177th Infantry Brigade assaulting, the 178th Brigade being in reserve. The advance progressed on schedule time, the third objective, Les Tuileries—Cote la Folarde, being reached at about 11.30 a. m. In the afternoon a heavy fog arose, making it difficult for the advancing infantry to be certain of its location. The position of the line was checked by field officers and it was reported as on the third objective, Cote la Folarde—northern edge of Bois de Barri-court to just east of Les Tuileries.^{17, 18}

On November 2 the attack was slow and uncertain.¹⁷ The attack of the assaulting battalions was directed to move forward and follow the barrage. This attack failed to get started, because the barrage was about one-third as dense as the preceding day and was not recognized as a barrage by the attacking troops. Successive attacks were ordered and started during the day, but did not succeed because the infantry was instructed to follow the barrage instead of having orders to move forward at definite hours, regardless of the barrage. The enemy's resistance was severe, both with artillery and machine guns. Moreover, liaison was not satisfactory during the day. It was late in the afternoon before the attack really progressed, bit by bit, on the left and on the right under covering fire of all available artillery. At about 9 p. m., the right regiment entered Tailly and placed itself on its objective for the

^a For map of activities of this division for this period, see Plate XLVI.

day, and the left regiment, although not having taken Barricourt, which was held by enemy machine guns, had practically encircled the town. The reserve Infantry brigade moved after placing its leading element in Bois de Barricourt, preparatory to the relief of the advance brigade.¹⁷

On November 3 the 178th Brigade passed through the 177th Brigade and attacked at about 6 a. m. The mission of the division was now to attack and carry the heights overlooking Le Champy Haut and Beauclair, and to push strong reconnaissances toward Stenay. The Infantry started satisfactorily, and at 7.30 a. m. a report was received that Barricourt had been taken as well as the heights east and west. At 9.30 a. m. the advance brigade commander reported his troops were on the objective for the day and were entrenching on the heights. He was then ordered to press forward at once with his reconnaissances toward Stenay and to the north. Reports in the latter part of the morning indicated enemy resistance developing on the right and left. At 12.05 p. m. the leading battalion of the right regiment was reported clear of the woods beyond the heights. Through the officer in charge of the message center, liaison was accomplished with the advance battalion of the right regiment, which was held up before Beauclair. Artillery fire was then adjusted on the southern edge of Beauclair. At dusk all the remaining artillery ammunition was fired in support of the Infantry attack, which moved up to the town. Full possession of the town of Beauclair was gained and patrols were put in Halles, but the Infantry did not enter Beaufort until the following morning. On the left the exploiting column had passed Le Champy Bas and had entered Bois des Dames.¹⁷

On November 4 the mission of the division was to advance and seize the town of Laneuville, the north edge of Foret de Dieulet, and to push reconnaissances forward to the Meuse and reconnoiter for river crossings. The operations for the day were slow and on the whole unsatisfactory, although the division gained its objective. Just before 8 a. m. word was received from the advance brigade that the commander of the right assaulting battalion reported a successful flanking move, but that unless an artillery fire could be put down immediately, instructions planned for the barrage at 8.30 a. m. should be countermanded. This was done. Further reports were meager and unsatisfactory. The division commander accordingly went forward to the heights north of Tailly, overlooking the operation. The inactivity of our Infantry was apparent. Beyond the river, large convoys of Germans could be seen leaving Stenay. South of the Foret de Dieulet small numbers of the enemy, apparently machine gunners, could be seen moving about. Our troops north of Beaufort were receiving fire and were not advancing; our artillery was practically silent. The division commander therefore directed the advance brigade commander to drive forward his attack and take Laneuville. More favorable progress was then reported on the left, where the attacking battalion had entered the woods, although experiencing steady resistance, and was followed by the support battalion. The center battalion made little progress. The battalion on the right could not advance until the artillery support

was obtained. The assaulting battalion on the left reported itself on its objective about an hour before dark. On the right the town of Laneuville was entered by an officers' patrol and a reconnaissance was made of the destroyed bridge and railroad in the vicinity before midnight.¹⁷

On November 5 the mission of the division was to continue the advance and drive the enemy across the Meuse, including in this operation the Forêt de Jaulnay, and seize and hold the bridges in the front of the division. The leading brigade was given the mission of the division. About noon the corps commander issued instructions that the 89th Division would hold the heights east of the Meuse on its present front. This meant obtaining a river crossing. The advance brigade commander was then given definite orders to drive in behind Forêt de Jaulnay and seize and hold the Pouilly bridge. However, later reconnaissances proved the Pouilly bridge had been badly damaged and men could cross to the town only singly. Inor bridge was found to be intact by an engineer reconnoitering officer, but it was destroyed on the night of November 5 by the enemy.¹⁷

Inasmuch as Field Orders No. 118 of the Fifth Corps required that, in addition to holding its front, the 89th Division would organize in preparation for an advance to the north, special inspections and conferences were held to obtain the exact status of the division. In part this was reported as follows:

Division holds position to guard bridges from Pouilly to Stenay, inclusive. * * * Bridges at Pouilly, Inor, Luzy, Cesse, and Stenay, with intermediate crossings, have been demolished by the enemy. Demolition at Pouilly was incomplete, and small infantry detachments have crossed and are holding the far side, supported by strong infantry detachments and machine guns on its side. It is believed that a similar operation is possible at Inor. At Pouilly it would take a week's time to put bridge and road in condition for heavy vehicles. Infantry and light trains could probably be put over in four days. Roads leading to bridges between Stenay and Pouilly are bad except road to Inor, which is reported as in fair condition. Road along northwest corner of Forêt de Jaulnay is practicable for first movement of artillery and trains, but it has not yet been determined if it can bear sustained traffic. * * * This division has forces in Pouilly and Forêt de Jaulnay, which area is also covered by the 2d Division. * * *

In the afternoon orders were received from the corps that the 89th Division would cover the front of the Meuse from Stenay northward, protecting the right flank of the advance, and that strong reconnaissances would be pushed across the Meuse and that this division should be prepared to follow the advance. Accordingly orders were issued bringing the reserve brigade into the line.¹⁷

On the 7th, no change in the line was made. During the morning word was received from corps headquarters revoking the order to extend to the northwest.¹⁷

On the morning of November 8 corps orders were received directing the 89th Division to push strong patrols across the Meuse and to maintain contact with the enemy. Accordingly, the 178th Brigade was directed to carry on aggressively the mission of the division and to force a crossing of the river at Pouilly on the night of November 8-9. The advance brigade com-

mander asked for further delay, and on the recommendation of the division engineer this was granted. However, instructions were given to push patrols across the river. Some six or seven attempts were made at night, by various expeditions, including several patrols, which tried to swim, regardless of the low temperature of the water. Two crossings were actually effected, but no information was obtained other than that the enemy was holding the east bank of the river all along the front.¹⁷

On November 9 the division maintained its position, with the 178th Brigade in the line patrolling the river, with a view to detecting enemy activity. During the night our patrols met with success. Using bridge equipment, detachments crossed west of Pouilly and gained important data in regard to the character of the banks on the east side of the river.¹⁷

On November 10 the 89th Division was directed to cross the Meuse at places already selected by the division commander, and to seize the heights east and northeast of Inor. The corps order directed that the best possible use be made of machine guns and artillery and that the hour of beginning the operation be 4 p. m. Dividing lines and boundaries were given: Letanne to the 2d Division and Autreville to the 89th Division. On the south the boundary was Stenay, exclusive. The plan was to force a crossing near Pouilly, drive eastward to the heights back of Inor, then exploit to the south and connect with the other brigade, which was to work north through Stenay, in liaison with the 90th Division. The 178th Brigade was given the mission of crossing at Pouilly, maintaining liaison with the 2d Division and furnishing the combat liaison troops on that flank. The 177th was given the task of maintaining combat liaison with the 90th Division, sending troops by the footbridge at Villefranche, as well as by a reported footbridge at Stenay, to push northward to the far side of the river, clearing the woods and maintaining contact with the 178th Brigade north of Inor.¹⁷

On the night of November 10-11 the operation developed on the left practically as planned. The hour of starting was coordinate with that of the 2d Division; and although our troops began the operation of moving boats from their camouflaged park near the main road about 4 p. m., the crossing of the river was not under way until 9.30 p. m. Two battalions of Infantry crossed the creek running from Ferme de la Wamme down the river, proceeded north circling Pouilly, and did not disturb the inhabitants or garrisons until our position was well secured on the heights beyond. The capture of the town was then completed and our Infantry pressed on and took Autreville after daylight, and reached the heights to the east. The combat liaison battalion, and the machine-gun company, which was under the orders of the 2d Division, did not fare so well. Just as they were preparing to cross the river they were subjected to a very heavy concentration of enemy artillery fire, and suffered heavy casualties. Their operation was delayed, but they accomplished their mission with the 2d Division. To the south, the 177th Brigade sent one regiment, less one battalion, by way of the footbridge at Villefranche, following the elements of the 90th Division. One battalion was directed to

cross directly opposite Stenay as soon as opportunity afforded. The regimental commander with the Villefranche column moved up on the east side of the river just in rear of the 90th Division and on the left flank. He was told that the town was strongly held by the Germans and that since operations were to cease later in the day the 90th Division would not take the town. The engineers of the division, in Laneuville, again reconnoitered the crossing there during the night and commenced work which resulted in placing a platoon of our troops in Stenay at about 10 a. m., November 11.¹⁷

At 8.30 a. m., November 11, word was received from the corps that the armistice would go into effect at 11 a. m., and that firing would cease at that time. Since the division had been in the line a considerable time without proper bathing facilities, and since it was realized that if the enemy were permitted to remain in position our troops would be deprived of the billets and probable bathing facilities there, instructions were sent to the Infantry commander at Laneuville to push forward directly and take Stenay, not waiting for any assistance or support of the 90th Division. It was intended to complete the operation by capturing the heights east of the river between Stenay and Moulins. The enemy, however, was found to be in Inor and Cervisy. Moreover, orders were later received not to advance, and the line held at 11 a. m. The line of the division, when the armistice became effective, was approximately as follows: From the north side of Stenay westward to the first bend of the Meuse, north of Stenay, thence west of north to a point approximately 1 km. (0.6 mile) northeast of Autreville.^{17, 19}

MEDICAL DEPARTMENT ACTIVITIES

As the division went into action with a shortage of 16 medical officers, presently increased by casualties to 23, dental surgeons reinforced the battalion medical service, performing the duties of medical officers.²⁰

The scarcity of stretcher bearers was keenly felt, for no provision had been made to replace bandsmen, who had ceased to be used, and the regimental evacuation service was handicapped by lack of sufficient personnel to conduct the heavy and exhausting work incident to litter bearing. Whenever possible, prisoners were used for the purpose.²⁰

Before each attack packages containing sterile needles and silkworm gut were distributed to regimental and battalion surgeons, and through this provision many aspirating chest wounds were closed by suturing. Some of this work was done in positions as far forward as battalion and regimental aid stations; other cases were treated at the ambulance dressing stations, and none was allowed to go beyond the triage without suturing. It was noticed that patients when treated in this way suffered less, were transported more easily, and reached the hospital in much better condition than in previous engagements, when only gauze and adhesive plaster were used to control aspiration.²¹

On November 1 Ambulance Company No. 356, with seven horse-drawn ambulances and a horse-drawn ambulance company from the 2d Division, attached for temporary duty, left La Grange-aux-Bois Ferme at 5.30 a. m. Ambulance Company No. 354 left this farm at 6.30 a. m., all companies en route for a point near the eastern edge of the woods on the road south of Bantheville, where at 7.30 a. m. a dressing station was established. The animal-drawn companies operated north to the Remonville—Bantheville road, returning over a dirt road through the woods to the dressing station, where patients received treatment and were evacuated thence to La Grange-aux-Bois Ferme by motor ambulances. Ambulances of Ambulance Company No. 353 were called into service about 9 a. m. The dressing station was under shell fire several times during the day, occasioning some casualties among the personnel.²²

On November 2 the director of ambulance companies, with ambulances from Ambulance Company No. 354 and Ambulance Company No. 356, moved to Remonville, where Ambulance Company No. 353 later established a dressing station. Because of heavy shell fire the vehicles of Ambulance Company No. 354 were parked behind a hill south of that town, while the horse-drawn ambulances worked forward evacuating the wounded from Barricourt Wood. At 3 p. m. of the same day, after reconnaissance by the director of ambulance companies, a dressing station was established on the Remonville—Barricourt road, at the south edge of Barricourt Wood; but this location was found to be too dangerous and was abandoned. Because of road conditions it was particularly difficult to evacuate the 353d Infantry.²³

At 9 a. m., on November 3, three motor ambulances were sent to Tailly, where a few patients were found. After reconnaissance, Ambulance Company No. 354 established a dressing station at that point and Ambulance Company No. 353 another at Barricourt, the latter advancing to Nouart on the morning of November 4. Evacuation was very slow on account of road conditions, a round trip to the field hospitals at La Grange-aux-Bois Ferme requiring 16 hours.²⁴

Two days later the ambulance section was given 42 mules, using from that time 4 mules per ambulance; but roads were so bad that even this number could not pull a loaded ambulance, and several times doubletrees were broken.²⁴

On November 6 Ambulance Company No. 355 moved its station to Beaufort, establishing its headquarters at Barricourt, and Ambulance Company No. 353 moved its station to Beauclair, employing its ambulances to evacuate from the field hospitals now established near Nouart. The towns of Beauclair and Beaufort were under heavy shell fire at various times.²⁴

On November 10 Ambulance Company No. 355 moved its dressing station from Beaufort to Gaudron Ferme, and the next day Ambulance Company No. 354 established a station at Laneuville. These were the final movements of these two formations.²⁵

There were evacuated through the dressing stations the following litter and sitting patients—wounded, gassed, and sick—of the 89th and other divisions. The activity of these stations from day to day is indicated by the following statement of the number of patients they received:²⁵

Nov. 1	1,196	Nov. 8	94
2	652	9	105
3	188	10	37
4	231	11	57
5	315		
6	276	Total	3,332
7	185		

Patients received at ambulance dressing stations were examined, their wounds were re-dressed when necessary, splints were reapplied, morphine and antitoxin serum were administered, hot drinks and food were furnished, and shock cases were treated. In a number of instances patients had to be held in these stations for a rather long time; for instance, during the night of November 6, 230 patients were held at Tailly and Nouart because traffic conditions made it impossible for ambulances to get through to the rear. A good shock ward, therefore, was improvised in each station in a vacant building, and in these patients were made comfortable.²⁶

The horse-drawn ambulances proved invaluable in this sector, for in Bois de Bantheville, Bois de Barricourt, and Forêt Dieulet they operated successfully on roads impassable for motors. Four animals were absolutely necessary for each vehicle.²⁷

A station for slightly wounded which had opened at La Grange-aux-Bois Ferme on October 23 moved to Remonville on November 1 and to Beaclair on November 5. All walking wounded were directed to this station, which relieved the ambulance section of much work and was a great factor in preventing wastage. Wounds were dressed, antitoxin serum administered to such as had not received it, and men able to carry on were returned to the front. A large number of men who were slightly ill and others suffering from over-fatigue were sent to this station. After being given a few hours' rest, hot drinks, food, and cigarettes, the majority of them were ready to return to their organizations, generally of their own free will. A small minority had to be put in charge of the military police, stationed there for that purpose.²¹

On October 30 Field Hospital No. 356 moved to La Grange-aux-Bois Ferme to function as a triage, and Field Hospital No. 354 came up during the night of October 31 to care for shock and nontransportable cases. Field Hospital No. 353 was moved up in reserve and set up on the following day. Field Hospital No. 355 remained in its old location, 2 km. (1.2 miles) south of Eclisfontaine, on the road to Charpentry, where it continued to care for gas cases and the divisional sick. On November 5 the field hospitals began moving, one each day, to a new location northeast of Nouart.²⁸

The first casualties incurred in this phase of the operation reached hospital on the morning of November 1. Fracture cases were examined by the

division orthopedist, and splints readjusted when needed. Shock cases, sent to designated wards for appropriate treatment, were held in hospital as long as was necessary, the length of patients' stay varying from 20 minutes to 5 days. Severely wounded patients—who, unless in shock, were evacuated as rapidly as possible—were given preference in evacuation over all others.²⁹

Though pain and hemorrhage were usually the most evident essential factors in shock, many cases were admitted in profound shock for which the injury alone could not have been responsible. These had been exposed to cold and wet for varied lengths of time. Medical officers were impressed by the benefit which followed the use of morphine in large doses, and battalion surgeons were encouraged to use it liberally. In many a case of severe injury very little shock was present if the patient was not in pain. It was appreciated that heat was the most important factor in the treatment of these cases, for which reason shock beds and hot-water bottles were provided. Hot drinks were given whenever it was possible for the patients to take them, and gum-salt solution was used intravenously when indicated.²⁰

All gassed patients were cared for at Field Hospital No. 355, which treated 415 cases between October 28 and November 11. Of these, 15 per cent were returned to duty within a few days. Patients were stripped immediately after admission, thoroughly bathed in soap and water and then with a solution of bicarbonate of soda. Surface burns were dressed with a saturated solution of the same drug, and the patient's eyes were washed in a 2 per cent solution of bicarbonate of soda and covered with a dressing kept wet with the same solution. Gassed patients were then dressed in pajamas and kept in a ward tent under observation, except that severe cases were evacuated to the rear as soon as possible.²⁶

During the period from November 1 to 11, 3,285 cases passed through the triage, of whom 1,133 were from other divisions, 15 were French, and 191 were prisoners of war.

Those admitted from the 89th Division were classified as follows: Wounded, 43 officers, 1,311 men; sick, 25 officers, 565 men; totals, 68 officers, 1,876 men.³¹

Evacuation to the rear—a long and tedious journey—was effected partly by division ambulances and partly by trucks, with the help of 29 trucks from the corps supply train, ambulances from United States Army Ambulance Service Section No. 590, and by two ambulances from Ambulance Company No. 355, which made short hauls. The length of time required for making these trips varied; at best it was too long, and was dependent upon the distance to the rear, upon road conditions and police regulations concerning one-way roads, and upon whether the journey was made during daylight or darkness. Mobile Hospital No. 4, near Cheppy, which received nontransportable wounded, 7 km. (4.3 miles) from the triage, was the nearest army unit to which the divisional hospitals evacuated.²⁹

The 89th Division had been in forward areas since August 6, but had shown a very small pneumonia rate despite the fact that the troops had lived

under conditions which are considered ordinarily to predispose to that disease—exposure to wet, cold, fatigue, and an almost universal epidemic of influenza. There were but 20 suspected and 2 positive cases of pneumonia. Freedom from this disease was attributed by the division surgeon to the fact that up to November 20 the men lived out of billets in small groups in the open air.³²

The following casualties occurred in the Medical Department personnel with the division:

Wounded—Officers, 5, men, 24; gassed—officers, 2, men, 8; killed—officers, 1, men, 9.³²

THE 1ST DIVISION

During the period November 1–5 the 1st Division advanced forward behind the Fifth Corps, in the reserve of that corps. On November 5 the march was directed to be continued to the line then held by the 80th Division (First Corps). Elements of the 1st Division were to pass through the front-line elements of the 80th Division.³³

On November 6 the division attacked at 5.30 a. m., the line of departure being approximately the Beaumont—Yoncq road. The mission of the division was to advance in the direction of Yoncq—Mouzon and to seize a crossing of the Meuse at Mouzon. During the operations but slight resistance was encountered. The enemy had apparently withdrawn across the Meuse, leaving only isolated machine guns to delay the advance.³⁴ Yoncq was occupied at 7.30 a. m., and the heights overlooking the Meuse were reached at 11.45 a. m. Patrols were sent out. These exploited Villemonttry, Givodeau Ferme, Mouzon, Autrecourt, and the general line of the Meuse River. At noon, two companies of the 18th Infantry were pushed forward to seize and hold the crossing of the Meuse at Mouzon. Rush orders now were received for the division to assemble and march with all haste to the heights south and southwest of Sedan.³⁵ The movement was to be made in five columns, from east to west.³⁵

At daylight on November 7 the 16th Infantry was in position and began the attack. The operation was carried out in three phases, the final objective being Hill 202. At 4.30 p. m. the regiment had reached its final objective—that is, a line running from east to west just north of Hill 202. Here it consolidated its position and prepared for defense in depth. At 7.40 a. m. the 28th Infantry reached the town of Chehery. The advance from here was made against severe machine-gun and artillery fire coming from the heights north of Cheveuges. The 26th Infantry marched by way of Malme—Omicourt. After leaving, column 4 encountering resistance from the woods north of Omicourt, these woods were attacked and captured. St. Aignan was captured, and strong patrols were pushed out to the north of this village. At 2 p. m., in accordance with instructions from the Fifth Corps, the division was withdrawn to a position south of the line La Besace—Autrecourt. By 5.30 p. m. all units of the division had severed contact with the enemy and were on the march back to the designated area.³³

MEDICAL DEPARTMENT ACTIVITIES

By November 5 the division surgeon, with the commanding officer of the sanitary train and the director of ambulance companies, had reached Nouart, around which town the division was encamped. The field hospitals, somewhat to the rear, were packed on trucks ready to move forward at a moment's notice. The advance began on the 6th was accomplished with but relatively few casualties, the number killed or dying of wounds being 98, including 3 officers. The number of wounded was 738, including 22 officers.³⁶



FIG. 85.—Field Hospital No. 13, 1st Division, at Vaux, Ardennes, November 6, 1918

Movement of troops was so rapid that it was impossible for the ration trucks to supply them, officers and men appeared to ignore hunger as well as discomfort and fatigue, and the number who failed to keep up with the advance was very small indeed. Though it was effective, service of battalion aid stations was especially difficult; for while these formations cared for patients, at the same time they had to keep up with their commands. From the Medical Department standpoint then the advance partook more of the nature of a rapid and difficult march than of an attack. It was practically impossible from time to time to establish and operate satisfactorily either dressing stations or field hospitals. As a matter of fact, conditions were such that they

were not required largely, for hospitals of the 89th and 42d Divisions received some of the casualties of the 1st Division, and sufficient transportation was available to remove others to the mobile hospitals at Bantheville and Exermont or to the evacuation hospital at St. Juvin.³⁷

On the morning of November 6 dressing stations were established near the crossroads at La Bagnolle by Ambulance Company No. 12, and at La Thibaudine Ferme by Ambulance Company No. 3, which a few hours later moved to Yoncq. United States Army Ambulance Service Section No. 649 was also stationed at La Thibaudine Ferme, while Ambulance Company No. 13 evacuated Field Hospital No. 13, at Vaux, and Ambulance Companies No. 2 and No. 3, and Field Hospital No. 3 remained at Nouart. On this date Field Hospital No. 13 was joined by Field Hospital No. 12; but as the latter unit received no patients it moved the same day to Sommauthe in reserve.³⁸ At this time evacuation was from the advancing front to the dressing stations at La Bagnolle and at La Thibaudine Ferme (replaced later by the station at Yoncq) and then to Field Hospital No. 13 at Vaux, where nontransportable cases were received and whence others were transferred to the hospitals of the 89th Division.³⁹ This evacuation circuit was extremely difficult, for roads were not only very muddy and congested but they had been destroyed to a certain extent by mines and became progressively worse under heavy traffic. In order to remedy matters it was decided, after reconnaissance, to establish a field hospital near La Bagnolle. Then, on the evening of the 6th, the division's sector and mission were suddenly changed and the division was ordered to advance toward Sedan.³⁹ As the sanitary train received instructions concerning this movement about 9 p. m. there was no opportunity for it to make reconnaissance of roads or area, but tentative plans were made (based on information of the enemy position) to locate dressing stations at Chaumont and Cheveuges by Ambulance Companies No. 12 and No. 13, respectively, to be served also by United States Army Ambulance Service Section No. 649, and to advance Field Hospital No. 12 to Chemery.⁴⁰ The last-named unit, however, while en route was directed to camp at Le Grose Faux and to await further orders. Ambulance Company No. 13 found that the enemy still occupied Cheveuges and therefore located in the vicinity of Chemery. The medical supply unit, attempting to reach the same point, was held up by a block in road traffic until withdrawal of the division was ordered.⁴⁰ A skeletonized hospital, Field Hospital No. 2, sent from Nouart on the only truck available, likewise was unable to reach its destination. There existed, therefore, in this area only a fragmentary evacuation system at the time that withdrawal was ordered, though a few ambulances had been able to work their way forward. Patients in the most advanced position were received by a small field hospital established by an organization of the 42d Division at Chemery.⁴¹ All roads through the forest south of the Beaumont-Stonne road were almost impassable. United States Army Ambulance Service Section No. 649 worked its way south after the division began to withdraw, but Field Hospital No. 12, with the medical supply unit, was stalled for several days near La Forge Ferme, even tractors failing to pull it through. Field

Hospital No. 13, at Vaux, continued to function until November 12, receiving 637 patients.⁴²

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CHAPTER XXXII

THIRD PHASE—Continued

THIRD CORPS

On November 1, at 5.30 a. m., the general attack for which our troops had been preparing during the previous few days was launched. The line of departure was approximately from east to west, a point on the Meuse about 1 km. (0.6 mile) southeast of Brieuilles-sur-Meuse, thence along the Meuse to a point opposite Liny-devant-Dun, thence northwestwardly, south of Clery-le-Grand to a point approximately 500 meters (545 yards) north of Aincreville, thence following the ridge just south of Ruisseau de Cheline, including Bourrut, passing just south of La Grande Carre Ferme.^{1, 2}

The 90th Division, on the left, was the attacking division; the 5th Division, on the right, was to hold its front, meanwhile pushing out strong patrols to develop the enemy's main line of resistance and seize any ground made possible by the advance of the 90th Division. The attack progressed in accordance with the scheduled arrangements. At 7.05 a. m. Clery-le-Grand was captured and troops of the 90th Division entered Bois d'Andevanne. The right regiment of the 90th Division reached its objective, but the left regiment encountered heavy machine-gun and artillery fire in Andevanne and was forced to halt. By the end of the day the corps line was roughly the line of the corps objective; that is, the ridge north and east of Andevanne, thence generally southeast to the position of the right flank of the morning.¹

On November 2 the attack again started at 5.30 a. m. Clery-le-Petit was taken at the outset and patrols of the 5th Division, sent out to capture Bois de Babiemont, succeeded. The 90th Division encountered strong resistance at Villers-devant-Dun and in the Bois de Raux. The day's operations centered around these two points, and it was not until late in the afternoon that they were reported taken. The line for the night was approximately as follows: North edge of Bois de Raux, Hill 321, head of Ravin du Fond de Theisse, thence to the exploitation line to Les Dix Jours, thence to Les Grandes Raies, including Cote 216, Cote 261, thence to the Meuse, including Clery-le-Petit.¹

On November 3 the attack continued. The enemy started a rapid retreat and offered resistance only in the form of rear-guard action. By night our troops were occupying the general line of the heights from Halles to Sassey, Ferme de Jupille, Ferme de la Briere, Doullcon, and Clery-le-Petit.¹

On November 4 the advance continued with but slight and scattered resistance from the enemy. Our patrols continued active along the west bank of the river, reporting all bridges destroyed along the front and the bridge-head strongly held by detachments who were very alert. For the day, the line

held was approximately as follows: The west bank of the Meuse south of Sassey, the heights Halles—Sassey, with detachments in Wiseppe and strong patrols, in conjunction with patrols of the 89th Division,^a pushing forward in the direction of Stenay.¹

During the night November 4–5 the 5th Division perfected a crossing of the Meuse and a canal in the vicinity of Brieculles, and by daylight had one brigade east of the Meuse. After a foothold had been gained and the rear guard of the enemy beaten down, advance was ordered. By night of November 5, the corps line included Laneuville, thence south along the west bank of the Meuse. East of the river the corps held Milly-devant-Dun, Dun-sur-Meuse, Cote 292, Limy, Cote 260, and the entire Bois de Chapillon.^{1, 2}

On November 6 the successes of the 5th Division east of the Meuse were continued. Encountering nothing but the usual rear-guard action of machine guns, our troops made rapid advance, and by the close of operations for the day held the line: Lion-devant-Dun, Murvaux, Fontaines, Cote 284, Bois de Sartelles and Vilosnes, with fighting still in progress on Cote St. Germain and in the Bois de Fontaines. The 90th Division, on the left, continued its preparations for a crossing of the Meuse at an early date.¹

On November 7 the completion of the capture of the heights east of the Meuse, including Lion-devant-Dun, was continued, and preparations were started to organize defensively those positions in depth. Attacks were made on the 5th Division subsector, resulting in the capture of Cote St. Germain, Cote 350, Bois de Corrol, La Sentinelle, and Cote 378. On November 8 the day was comparatively quiet and was spent by our troops in improving, strengthening, and defensively organizing the positions already gained. In the direction of Brandeville minor advances were made, but on the whole the corps line remained the same as it was at the close of the preceding day's operations.¹

On November 9 pursuit of the enemy, whose retirement still continued, was made. The 32d Division was put in the line on the corps' right flank. The 5th Division was now in the center, with the 90th Division on the left. The corps sector was increased by the addition of the area of the French 15th Colonial Division, north of Damvillers, where pursuit of the enemy was made by a march of divisional columns preceded by powerful advance guards, who in turn were preceded by strong patrols. The morning was spent in forming the columns, in the starting of patrols and advance guards, and in crossing the troops of the 90th and 32d Divisions to the east of the Meuse. The pursuit continued rapidly throughout the day, and at night the corps line included Mouzay, Louppy, Remoiville, and our patrols were engaged in the hostile rear guard in the outskirts of Jametz; Breheville and Peuvillers were taken over from the French by the 32d Division.¹

On November 10 the pursuit continued. At several points the enemy resisted our advance with strong detachments. Baalon and the heights to the north formed his chief center of resistance. Our troops were retarded somewhat by poor roads, especially in the Forêt de Woevre, as well as the

^a For map of activities of this division for this period, see Plate XLVI.

necessity to permit complete clearing of the enemy from the towns and areas previously taken. For the night the corps line included part of Stenay on the left and Jametz, Bois de Jametz, Bois de Lisson, and part of Bois du Chenois. Practically the whole of the Forêt de Woëvre was in the hands of the corps.^{1, 2}

On November 11 preparations for a continuation of the pursuit early in the morning were halted by word from the division headquarters, First Army, that an armistice had been signed and would become effective at 11 a. m.¹ The line at the hour of the armistice included Stenay and Baalon and extended along the eastern edge of Forêt de Woëvre; otherwise it was practically the same as of the preceding day.²

MEDICAL DEPARTMENT ACTIVITIES

As the axis of the corps operation during this phase of the Meuse-Argonne was toward the northeast, logical sites for the corps triage, it advancing *pari passu* with the troops, would have been Bantheville, Aincreville and eventually at Dun-sur-Meuse. On November 3 and 5, elements of the corps triage were moved from Bethincourt to Septsarges, and just before the armistice were advanced again to a point on the main road between Bantheville and Aincreville. The road between Dun-sur-Meuse and Bantheville was in excellent condition, while a standard-gauge railway ran through the former town and a 60-cm. gauge railway through the latter, so that several alternative lines of evacuation were potentially available. Had the railway and roads along the Meuse not been opened to traffic, the road from Dun-sur-Meuse via Bantheville would have provided a route for evacuation.³

All divisions in the Third Corps were provided with operating teams, but the few patients requiring operating in divisional units and the establishment of a corps hospital for surgical cases permitted these teams to meet requirements there by serving in rotation. An adequate and uninterrupted surgical service was thus provided. Similarly, for a short time, there had been alternation by divisions in the corps gas-hospital service, but this did not prove satisfactory and it was discontinued, the number of gas cases in each division being sufficient to keep one of its hospitals fully occupied. Two shock teams were organized in each division, one of which assisted an operating team by caring for preoperative and postoperative cases, while the other was employed in restoring those who had become chilled en route to the hospital, but which were not cases suitable for operation in the division.⁴

THE 90TH DIVISION

On November 1, at 5.30 a. m., the 90th Division, the left division of the Third Corps, launched its attack from a line of departure approximately as follows: North edge of Bois de Bantheville, Remonville—Bourrut road to Bourrut and the Bourrut—Aincreville road to the western edge of Aincreville. The mission of the 90th Division was to seize the heights, north and east of Andevanne, and the ridge running southeast to the Croix St. Mouclen.

The 180th Brigade, comprising the 360th Infantry on the left and the 359th on the right, was the attacking brigade. The 179th Brigade was in reserve. The first day's attack was divided into two phases. There was an intermediate objective, Hill 300—Hill 278—La Grande Fontaine—southeast along the Ruisseau Cheline, which all troops were scheduled to reach by 8 a. m.; then there was the corps objective, the final objective for the day, which was Les Tuileries (exclusive)—heights north and northeast of Andevanne—ridge southeast from Andevanne to Croix St. Mouclen.^{5, 6}

At 6.30 a. m. the leading battalion of the 360th Infantry was entering the southern edge of the woods north of La Grande Carre Ferme. At 7.30 a. m. the troops of the 359th Infantry were on the intermediate objective. At 10.35 a. m. the 1st Battalion, 359th Infantry, had reached the corps objective. At 10.30 a. m. the right of the assault battalion of the 360th Infantry was on Hill 278. Here, they were held up because of artillery and machine-gun fire from Andevanne and Cote 243. At 4.30 p. m. the 2d Battalion of the 360th Infantry was on the corps objective, and at 8.45 p. m. the 1st Battalion, 360th Infantry, was occupying Cote 243.⁵

On November 2 the attack again started at 5.30 a. m. The 359th Infantry advanced, without serious resistance, to just south of Villers-devant-Dun, at which place it encountered severe resistance. Likewise, was the 360th Infantry held up just south of Hill 321 and at Bois de Raux. At 12.15 p. m. the 359th Infantry reported its 3d Battalion as occupying Cote 261 in the sector of the 5th Division, and its 2d Battalion was advancing through Villers-devant-Dun. At 2 p. m. the 360th Infantry reported its 2d Battalion entering Bois de Raux, its 1st Battalion occupying Hill 321 and advancing north. At the same hour, the 369th Infantry reported Villers-devant-Dun as having been thoroughly cleared of the enemy. At 7.30 p. m. the front line of the 360th Infantry extended along the northern edge of Bois de Raux, Hill 321, and Villers-devant-Dun. The front line of the 359th Infantry extended from Les Dix Jours, along the original exploitation line to the right boundary of the division, about 2 km. (1.2 miles) northwest of Cote 216.^{5, 2, 1}

On November 3, at 8 a. m., the 179th Brigade passed through the lines of the 180th Brigade to carry on the exploitation. The 180th Brigade went into division reserve. Following the seizure of the bluffs Halles—Sassey, at noon, by the 179th Brigade the 180th Brigade was ordered to move forward to a position on the heights.⁵

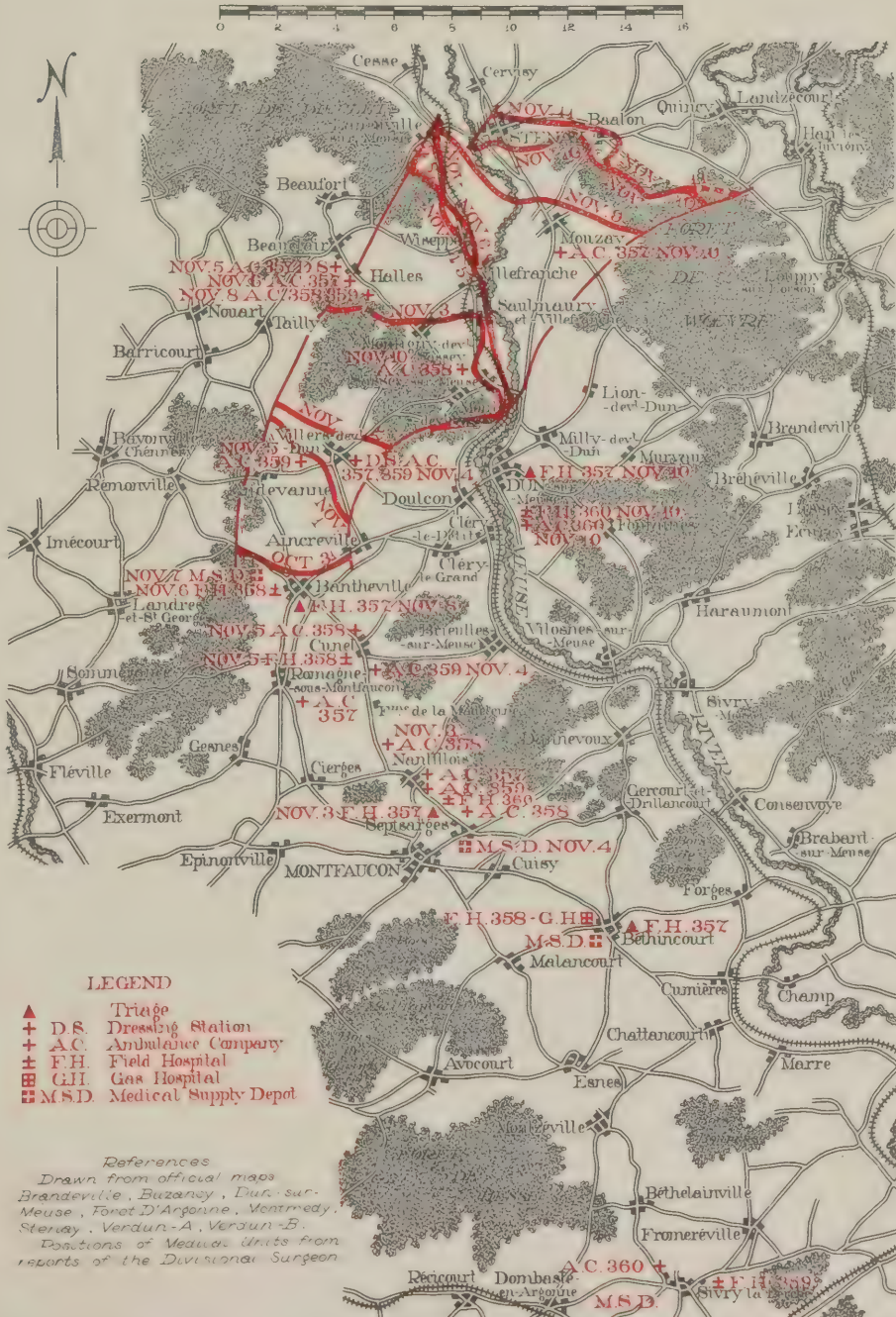
On November 4 a reconnaissance forward was made, the mission of the division for this day being to seize Cote 205, and to secure possession of all territory north of that point in the division sector west of the Meuse to Laneuville. At the end of the day the line extended from the woods southwest of Laneuville to the Bois de Doulon, with patrols in Laneuville; and included Wiseppe, Villefranche, Saulmory, and Sassey.^{5, 2, 7}

During the period November 5–8 the division line remained practically unchanged.⁵

On November 9 the 179th Brigade crossed the Meuse at Sassey, its mission being to take the wooded heights west and south of Baalon, to take Stenay and

MEUSE - ARGONNE OPERATION THIRD PHASE NINETIETH DIVISION NOVEMBER 1-11, 1918

Scale in Kilometers



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

the heights northeast of that town. The 180th Brigade continued in reserve, the 359th Infantry awaiting orders at Montigny, and the 360th assembled at Sassey.⁵

On November 10 the 359th Infantry crossed the Meuse at Sassey, the 360th at Dun-sur-Meuse. Both regiments moved in the direction of Mouzay. At 9.50 a. m. one company of the 358th Infantry, 179th Brigade, entered Stenay. Through the remainder of the day efforts were made to complete the capture of Stenay, but these were unsuccessful. At 9.30 p. m. the 108th Brigade was assembled in the area between Baalon and Chatel Charmois, in readiness to attack in the direction of Montmedy.⁵

On the morning of November 11 patrols from the 179th Brigade entered Stenay and Baalon to complete the capture of these places prior to 11 a. m., when the armistice was to become effective. Both the 357th and 358th Infantry reported prior to 11 a. m. that Stenay and Baalon had been completely cleared of the enemy.⁵

MEDICAL DEPARTMENT ACTIVITIES

On the morning of October 30 all battalion officers of the 360th Infantry, with a medical officer for each battalion, were sent forward to reconnoiter for sites and to locate and prepare aid stations in positions which the units were to occupy in the region of Bois de Bantheville that night. Each battalion had 2 medical officers, 1 dental officer and his assistant, and 14 enlisted men of the Medical Department. Battalion surgeons were charged with keeping the medical carts with the troops at all times. The medical detachment and sufficient company litter bearers were to march in the rear of each cart.

The aid stations in question were located in the woods northwest of Bantheville. All litter cases were to be carried to the dressing station at Romagne, but this was found too remote, so ambulances went up the Bantheville road and sent ambulance company bearers to the aid stations.⁸

On October 31 aid stations of the 359th Infantry were located near Cunel. As troops advanced it was the practice for the battalion aid station to send forward one officer and three men to establish an advance aid station, which the remainder of the personnel joined as soon as they had collected and cleared their patients. Frequently, stations of two battalions were established at the same point, because of narrow frontage, road distribution, and shelter. The advance of troops on November 1 and 2 was so rapid it was found impossible to give the wounded the elementary first aid usually supplied at advance aid stations, as a sufficient supply of dressings and splints could not always be maintained at battalion aid stations.¹⁰ The only battalion able to keep its medical cart with its detachment at all times was the 2d, and this was accomplished by its personnel literally putting their shoulders to the wheels. So far as possible the battalion aid stations maintained an even exchange of litters, blankets, and dressings with the more advanced ambulance dressing stations.⁹

Units of the sanitary train were at first disposed as at the end of the second phase. The triage, Field Hospital 357, was at Bethincourt, Field Hospital No.

358 operating a gas hospital at the same place, an advance collecting hospital (Field Hospital No. 360) was at Septsarges, and the hospital for sick (Field Hospital No. 359) at Sivry-la-Perche. Dressing stations were located at Septsarges (Ambulance Company No. 358), Romagne (Ambulance Company No. 357), and Nantillois (Ambulance Company No. 359). Ambulance Company No. 360 (animal drawn) was in the triage at Bethincourt and at Sivry-la-Perche.

On November 1, because of the long distance from the front to field hospitals, the large number of casualties, and the congestion of traffic, only cases requiring immediate attention were sent to the triage from the dressing stations. Ambulance Company No. 359, at Nantillois, during the first 24 hours of this drive, cared for more than 800 cases. All mustard gas patients were stripped and bathed; other gassed patients were required to recline on litters. Nantillois at that time served as the ambulance head, and necessary supplies were kept there to meet not only the needs of dressing stations but those of the more advanced formations as well.¹⁰

On November 2 an aid station of the 359th Infantry was advanced to Aincreville and one of the 360th Infantry to within 1.6 km. (1.5 miles) of Andevanne. Ambulances could not reach the latter point because of large shell holes in the road, but light trucks received by the regimental surgeon from regimental headquarters managed to work their way around these obstacles and moved patients back to Aincreville throughout the night. In the 24 hours preceding 8 a. m. of November 2 three motor ambulance companies transported 289 litter and 454 sitting cases. Ambulance Company No. 357 established an advance station at Romagne, while the remainder of the company remained at Nantillois.¹⁰ On November 3 aid stations were advanced to Villers-devant-Dun, Montigny, Andevanne, and a point 2 km. (1.2 miles) from that town, on the Villers—Montigny road. Troops coming forward on this road were subjected to heavy shell fire, and casualties were heavy.⁹ Motor ambulances could not at first go nearer than within 1 km. (0.6 mile) of aid stations, but eventually they were reached by animal-drawn ambulances. Ambulant patients were assisted to collecting points and others were carried to the ambulance head.⁹

Ambulance Company No. 358 was located at this time at Septsarges. The triage at Bethincourt was now closed, and Field Hospital No. 357, reinforced by 1 officer and 15 enlisted men from Field Hospital No. 358, was moved to a site previously prepared near Septsarges. The nontransportable department did not function at this station, its work being prepared by the 5th Division triage, reinforced by a shock team from the 90th Division.¹¹

The following order was issued on November 3 covering movement of the triage:

Memo.

OFFICE OF THE DIVISION SURGEON, 90TH DIVISION,

3 November, 1918.

The triage of the 90th Division will move this date from Bethincourt to Septsarges.

Capt. Van D. Barnes and section of Ambulance Company #360, on duty at triage, will proceed by truck with two ward tents and one-half the gas equipment of the gas section of the 90th Division triage to Septsarges and report to Capt. Jesse W. Ingram for duty.

The officers on night duty at triage will also move by truck this afternoon. The above-mentioned personnel will all arrive at Septsarges in time to go on duty as triage force at 6 p. m. this date.

The officers on day duty at the triage will move the night of November 3 and 4 to Septsarges and be prepared to go on duty at 6.30 a. m. November 4. This latter move will not take place until notice has been received from Captain Ingram that he has begun the triage at Septsarges.

Captain Ingram will notify by telephone when he is prepared to function as commanding officer of triage, commanding officer sanitary train, Nantillois, office of the division surgeon, Romagne (Taylor 15).

Office of division surgeon will notify all regimental and battalion surgeons, either by telephone or courier, when triage is ready to function at Septsarges.

He will also notify the officers on duty at the dressing station at Bantheville and Cunel and the division medical supply officer at Sivry-la-Perche and Captain Zook, at the same place.

The nontransportable section of the triage at Bethincourt will continue to function until the 5th Division has established a triage at Septsarges. Upon receipt of this information the nontransportable section will cease to function at Bethincourt, will be packed and shipped to Septsarges.

The Emergency Medical Team No. 142 will report to the commanding officer of the 5th Division triage upon closure of the nontransportable section of the 90th Division triage at Bethincourt.

All trucks of the sanitary train employed in moving the night force of the triage this afternoon from Bethincourt to Septsarges will upon being unloaded return at once to the triage at Bethincourt and will report at once to the commanding officer for orders.

One-half of the medical supplies at the medical dump at Bethincourt will be moved this afternoon to Septsarges upon closure of the triage at Bethincourt.

Field Hospital Co. No. 358, now in reserve at Bethincourt, will be moved to Septsarges upon the closure of the nontransportable section of the triage at Bethincourt.

As the division wheeled to the right and approached the Meuse, from near Laneuville-sur-Meuse to Sassey, Medical Department formations moved accordingly.¹² Ambulance Company No. 357 established a dressing station in the church at Villers-devant-Dun. Ambulance Company No. 358 was located at Nantillois, and Ambulance Company No. 359 moved from Nantillois to Cunel, sending the dressing and litter-bearer section to Villers-devant-Dun on November 5, where they took over the dressing station previously established there by Ambulance Company No. 357, retaining this site until November 12. A part of Ambulance Company No. 358 had advanced, on the 3d, to Cunel; on the 5th the entire company was there, pitching a ward tent inside the walls of a ruined church. This location was used for four days as an ambulance head. Ambulance Company No. 357, retaining this site until November 12. A part which it operated until November 10. Part of Ambulance Company No. 360 was at Sivry-la-Perche, but 3 of its officers and 90 enlisted men were on duty with Field Hospital No. 357—the triage—at Septsarges.¹³ On November 5 Field Hospital No. 358 moved to Cunel and Field Hospital No. 360 advanced to Nantillois, while Field Hospital No. 359 remained at Sivry-la-Perche.¹⁴

On November 6 Field Hospital No. 358 moved to Bantheville, where it operated the triage until Field Hospital No. 357 arrived on November 8, and resumed this duty. Here the nontransportable department began operating

again, assisted by a shock team. Ambulance Company No. 359 moved to Villers-devant-Dun.¹⁵

On November 9 the 90th Division crossed the Meuse, on the right, and made a long advance to a point beyond Mouzay, where aid stations were established. No change was made in the locations of units of the sanitary train. The next day, when the division again made a deep advance, passing Meuse near Stenay on the left, while its right approached Baalon, Ambulance Company No. 357 established a dressing station in Mouzay, Ambulance Company No. 358 an advance station at Sassey, and the triage (Field Hospital No. 357) moved to Dun-sur-Meuse, while Field Hospital No. 360 moved to a site 0.25 km. (0.15 mile) west of the latter place, establishing there a rest hospital.¹⁶ The corps surgeon directed that Bras, northeast of Verdun and east of Charny, be investigated and a site for a field hospital for the sick be selected there.¹⁷

On November 11 Ambulance Company No. 357 was located at Mouzay, Ambulance Company No. 358 moved in its entirety to Sassey-sur-Meuse, and Ambulance Company No. 359 was located at Villers-devant-Dun until the triage was established at Dun-sur-Meuse, when the station at Villers was closed, it being out of the direct line of evacuation. Ambulance Company No. 360 established itself at Dun-sur-Meuse. Field Hospital No. 357 operated the triage at the last-named place until November 14. From October 23 to November 11 it received 3,794 patients from the 90th Division and 1,828 from other organizations, a total of 5,622.¹⁸

Field Hospital No. 358 (gas hospital) at Bantheville, evacuated its patients, 42 in number, and was closed. In the interval November 6-11 it had received 130 patients at this point.

Field Hospital No. 359 was still functioning at Sivry-la-Perche and Field Hospital No. 360 had remained at Dun-sur-Meuse.¹⁹

Ninety-nine per cent of all wounded arriving at the triage during this operation were found to have been properly splinted and satisfactorily dressed. There were few cases of shock other than some patients who were suffering from abdominal or chest wounds, incurred some hours previously, and cases of fractured femur. Even when well splinted these patients were invariably in profound shock. The average time taken in transporting wounded from the battle field to field hospitals was about 6 hours. Morale of the wounded was always high.²⁰

The proportion of killed to gassed and wounded was 1 to 5.

Casualties of the 315th Sanitary Train were as follows: Killed and died of wounds, 10; wounded and gassed, 40.

The triage reported the following admissions from the 90th Division:

Date	Wounded	Gassed	Sick and injured	Date	Wounded	Gassed	Sick and injured
Nov. 1.....	81	16	95	Nov. 7.....	32	13	76
2.....	409	162	53	8.....	19	7	78
3.....	304	120	117	9.....	16	0	35
4.....	110	75	86	10.....	154	36	119
5.....	44	15	61	11.....	21	58	53
6.....	53	20	91				

The medical supply unit had established a dump in a dilapidated farmhouse at Sivry-la-Perche on October 25, remaining there during the operation. An advance dump was established at the triage at Bethincourt and about seven truckloads of supplies distributed from it. It advanced with the triage to Septsarges and thence to Bantheville, where it was stationed on the day that the armistice was signed.¹⁹

The surgeon of the 360th Infantry reported as follows concerning maintenance of contact with that regiment, and its medical supply:²¹

Liaison was maintained between battalion aid stations and battalion P. C.'s by runner; from battalion P. C. to regimental surgeon at R. P. C., by phone; between regimental surgeon and ambulance company by ambulance runner. Keeping battalion aid stations near the battalion P. C. was very advantageous, as battalion surgeons were always conversant with the battalion commander's plans, and access to the field telephone expedited communications to the regimental surgeons. Regimental surgeon had with him at the R. P. C. one clerk, an orderly, and two runners furnished by the ambulance company, who were used to order ambulances to the collecting points; also two men loaned from the pioneer platoon from this regiment, who carried emergency supplies for the treatment of casualties occurring about the R. P. C. It was impossible to tag, administer A. T. S., or give more than first aid to many cases, on account of the darkness and adverse weather conditions, the battalion aid stations operating in the open, no shelter available, and lights tabooed. While dressings, splints, supplies, and service by the ambulance companies left much to be desired, only by almost superhuman effort on the part of the commanding officer of the 357th Ambulance Company, his officers and men, was it possible for them to function at all. The roads were literally torn to pieces by shell fire and continually congested by trucks and artillery. We evacuated approximately 900 cases from October 31 to November 11, and at least 90 per cent of them November 1 and 2.

THE 5TH DIVISION

When the general attack of the First American Army was made, on November 1, the mission of the 5th Division was to stand fast and be the pivot on the west bank of the Meuse for the swing of the Third Army Corps and the corps beyond to the north and northeast, and also to exploit the Bois de Babiemont and Hill 261 north of Clery-le-Grand, after the 90th Division had obtained its objective. In pursuance of the policy to make progress at slight cost, one company of the 60th Infantry, attacking with artillery assistance at the same hour as the general attack of the army, captured Clery-le-Grand, four minutes after "H" hour (5.30 a. m.), and drove the enemy north. At 9.30 a. m. a company of the 61st Infantry and a platoon of machine guns started forward through Aincreville to exploit Bois de Babiemont. These troops, however, were able to advance only 500 yards because of strong enemy machine-gun resistance. Late in the afternoon, patrols from Clery-le-Grand reached Hill 261, despite heavy machine-gun and artillery fire from the north.²²

The mission of the 5th Division on November 2 was, in case of withdrawal by the enemy, to cross the Meuse and advance northeasterly. Therefore, to gain a good foothold on the west bank of the Meuse, our troops approached Clery-le-Petit under cover of darkness, two companies of the 60th Infantry taking it at 6 a. m. and driving the enemy in the direction of Doulcon. Dur-

ing the day Bois de Babiemont was taken by troops of the 61st Infantry, and Hill 261 by troops of the 60th Infantry, those troops advancing to Bois de Babiemont encountering machine-gun fire on their left flank, since the 90th Division was not maintaining its scheduled advance at this time.²²

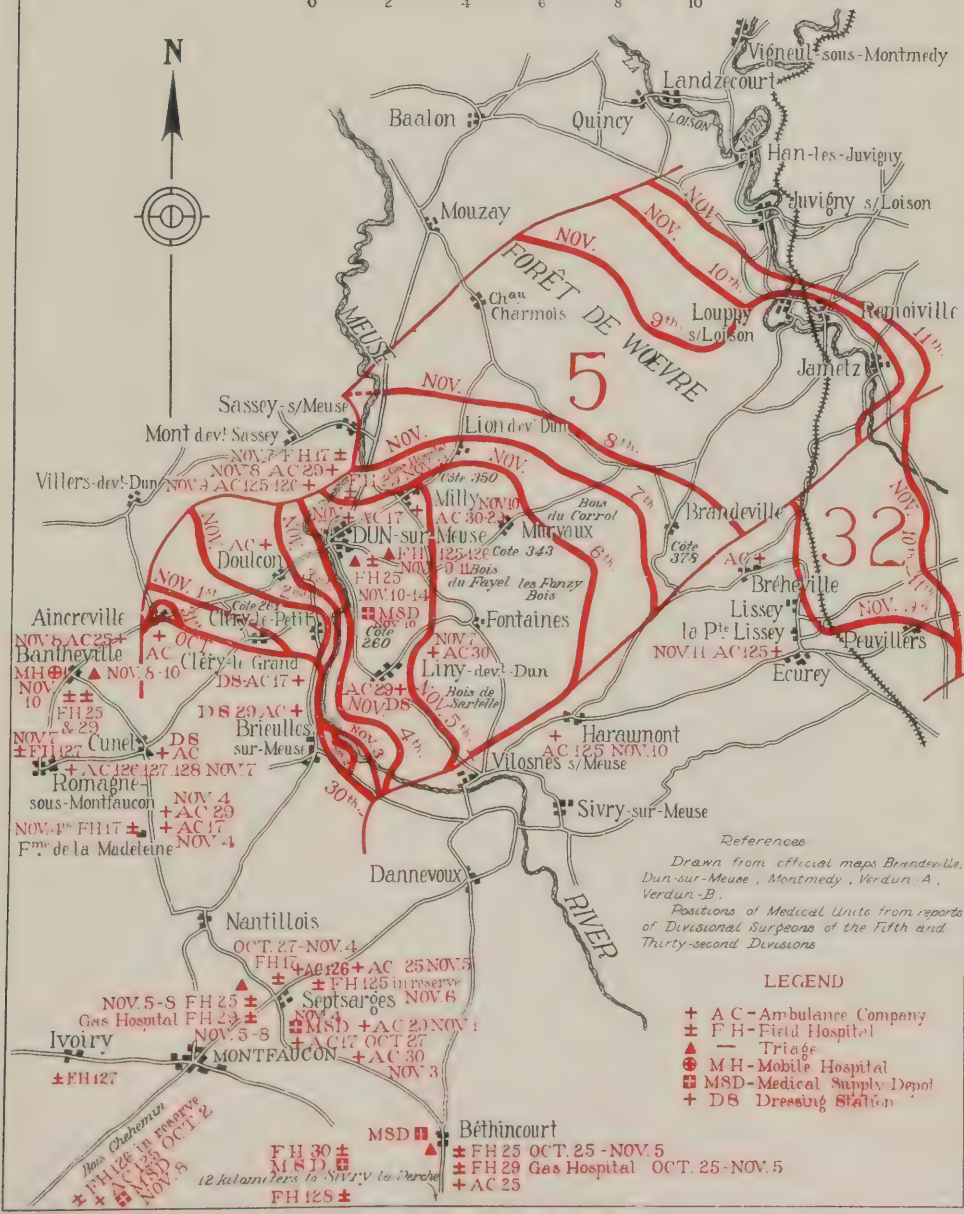
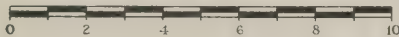
On November 3 the 5th Division cleared the region west of Dun-sur-Meuse and north of Hill 261 and also took Doulecon, in spite of machine-gun fire from several directions and artillery fire from east of the Meuse. Meanwhile, orders had come from headquarters, Third Corps, that the 5th Division was to turn due east and force across the Meuse and the canal beyond it and seize the heights of the Meuse to the east and thus form a bridgehead for the crossing of the rest of the army. The first attack was made by the 2d Battalion of the 6th Infantry, east of Briuelles-sur-Meuse. Owing to the flooding of the basin of the river north of Briuelles-sur-Meuse and its closing southward to within 100 meters (109 yards) of the ground held by the enemy, the front on which a crossing could be made was limited to a line 1.5 km. (0.9 mile) in extent. To the east of the river lay the canal, about 20 meters (21.8 yards) wide and approximately 10 feet deep. The entire basin of the river and the canal were visible from the high ground to the east thereof, which was manned by the enemy with infantry, direct-fire artillery, and machine guns, all at close range. On the east bank of the Meuse the Bois de Chatillon extended down the edge of the canal, concealing the enemy movements.²²

On the night of November 3-4 efforts were made to place footbridges across the Meuse. Between midnight and 1 a. m., November 4, one footbridge was in place and a second nearly finished, when work had to be stopped because the enemy swept all approaches by machine-gun fire. Under the protecting fire of all available men and machine guns, a small column of our troops attempted to rush the bridge at 2 a. m. on November 4, but were forced back. Repeated efforts to cross resulted similarly, and at dawn no one was over. It was impossible to move in the river basin during the day, and the troops who had reached the canal bank lay there and entrenched themselves.²²

No less difficult than the crossing east of Briuelles was the crossing east of Clery-le-Petit. Here the river was 110 feet wide and 10 feet deep. At 4 p. m., two battalions, one from the 61st Infantry and one from the 60th Infantry, echeloned in great depth, attempted a crossing, after artillery and machine-gun preparation. Intense enemy artillery and machine-gun fire from the slopes of Hills 292 and 260, east of the river, prevented the crossing. Our forces suffered many casualties, and the light pontoons which our troops constructed were destroyed as quickly as made. On the night of November 4-5, at 6.20 p. m., troops of the 6th Infantry crossed east of Briuelles on the two footbridges already prepared. Firing on both flanks, these troops rapidly silenced the enemy machine gunners which had held the banks, and organized a guard for the bridgehead. In the meantime, protected by these operations, the 3d Battalion of the 6th Infantry, using telegraph poles lashed together, as rafts, silently crossed the river and canal to the west of Bois de Chatillon. During the night all of the 10th Infantry Brigade had crossed the river and canal.³

MEUSE - ARGONNE OPERATION THIRD PHASE FIFTH AND THIRTY-SECOND DIVISIONS

Scale in Kilometers



References
Drawn from official maps Brandeville, Dun-sur-Meuse, Montmedy, Verdun-A, Verdun-B.
Positions of Medical Units from reports of Divisional Surgeons of the Fifth and Thirty-second Divisions

LEGEND

- + A C - Ambulance Company
- ± FH - Field Hospital
- ▲ Triage
- ⊞ MH - Mobile Hospital
- ⊞ MSD - Medical Supply Depot
- + DS - Dressing Station

Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

On the morning of November 5, the 1st Battalion, 6th Infantry, secured Hill 228, and the 3d Battalion completed the capture of Bois de Chatillon and captured Vilosnes-sur-Meuse, enabling the French on our right to cross the river while the 2d Battalion guarded the bridges. The 11th Infantry captured Liny-devant-Dun, thence, moving southward, captured Hill 260, with the assistance of a battalion of the 60th Infantry. The 3d Battalion of the 61st Infantry advanced over the south slopes of Hill 292, with the 11th Infantry on its right. The 2d Battalion of the 61st Infantry, advancing north of Hill 292, captured Dun-sur-Meuse at 1.45 p. m. The three battalions (2d and 3d of the 61st Infantry and the 3d of the 60th Infantry) reached the first objective, Milly being captured before nightfall by the 2d Battalion of the 61st Infantry.²²

At 8 a. m. on November 6 the attack was resumed. The 1st Battalion of the 6th Infantry captured Bois de Sartelle, completely breaking the resistance in front, and consolidated its position. The 11th Infantry swept aside all resistance and, advancing with wonderful speed and dash, captured Bois de Chesnois, Bois du Fayel, Les Fonzy Bois, Murvaux (in cooperation with the 60th Infantry), Fontaines, Hills 343 and 344, and gained a foothold in Bois du Corrol, east of Murvaux. The enemy was driven by the 9th Infantry Brigade from Cote St. Germain and Cote 350, at the northeast end of that hill. Lion-devant-Dun was taken by a company of the 61st Infantry. However, because the enemy was heavily shelling the town, our troops, instead of occupying it, entrenched near at hand.²²

On November 7 the attack was resumed. The 11th Infantry captured Bois du Corrol and conquered one-half of Bois de Brandeville. The 6th Infantry consolidated its position. The 128th Infantry attached to the Fifth Corps, effective November 6, advanced its leading battalion to Hill 370, but in progressing toward Brandeville was met by heavy machine-gun fire which it was unable to overcome. The 9th Infantry Brigade completed the capture of Lion-devant-Dun, Cote 350, and the valley southeast of it and the northwest slope of Bois du Corrol.²²

On November 8 the 11th Infantry completed the capture of Bois de Brandeville, and pushed patrols forward into Brandeville, which was entered at 6.30 a. m. A battalion of the 128th Infantry entered the town later with little or no opposition, the enemy having withdrawn to Cote 378, which was promptly put under the fire of our artillery. The 1st Battalion of the 6th Infantry, moving by way of Hill 388, captured Cote 378 with but little opposition. The 9th Infantry Brigade pushed outposts into the area to the north of the divisional objective as far as 2 km. (1.2 miles) north of Sassey, to cover the bridgehead of the 90th Division at Sassey.²²

On November 9 reconnaissance by the 10th Infantry Brigade demonstrated the enemy had withdrawn. Pursuit was immediately ordered and the 11th Infantry advanced with great vigor. The enemy rear guard, encountered near Bois de Moncel, was attacked and scattered, and Louppy was captured at 4.55 p. m., Remoiville at 7 p. m., and Jametz at about 9 p. m. Companies of the 61st Infantry, with machine guns, proceeded northward from Lion-

devant-Dun, despite strong enemy machine-gun resistance all along the route, and captured Chateau Charmois and Mouzay. A bridgehead was then established between Mouzay and Stenay for the 90th Division, and Mouzay was turned over to the 90th Division upon its arrival on the east bank of the Meuse.²²

During the night of November 9-10 troops of the 9th Brigade completed the capture of the southwest half of Forêt de Woevre, a jungle of trees and heavy undergrowth, whose roads were knee-deep with mud. On the morning of the 10th the 61st Infantry, on the left, was subjected to heavy, enfilading fire from the high hills east of Baalon and north of Juvigny, in the area of the 90th Division. Because the 90th Division was meeting such heavy resistance in the Bois de Chesnois, the 9th Infantry Brigade was advancing with its left flank exposed.²²

On November 11, when the armistice became effective, the division held the northeast edge of the Forêt de Woevre, with one left flank facing north, connecting with the 90th Division in the Bois de Chesnois, around the edge of the Forêt de Woevre, through the eastern edge of the Bois de Juvigny, thence south to north of Louppy, Remoiville, and Jametz.²²

MEDICAL DEPARTMENT ACTIVITIES

Ambulance Companies No. 29 and No. 30 operated the dressing stations. Ambulance Company No. 17 worked with Field Hospital No. 17, and Ambulance Company No. 25 worked with the triage.

Ambulance collecting stations were established in rear of the advancing troops at Septsarges, Nantillois, Ferme de la Madeleine, Cunel, Aincreville, Doulon, Dun-sur-Meuse, and at Milly-devant-Dun. Those at Nantillois and Ferme de la Madeleine were in use throughout the first part of this phase of the operation, but during the latter part, as the advance was more rapid, collecting stations were changed from day to day as occasion demanded. Ambulances from these stations were sent forward to regimental aid stations or elsewhere as needed.²³

During active operations the ambulance companies of the division operated well toward the front and rendered valuable assistance to the regimental medical personnel in carriage of patients by litter. The advance of troops east of the Meuse was exceptionally rapid. There were also many casualties during this time, and it was difficult to maintain liaison between the ambulance companies and the regimental sanitary personnel. It is of interest, however, to note that the second vehicle to cross the Meuse River was an ambulance belonging to Ambulance Company No. 30, at that time attached for duty with the 61st Infantry. The first two vehicles to enter Brandeville were ambulances belonging to the sanitary train of the division.²³

On November 1 Field Hospital No. 25 operated the triage at Bethincourt, Field Hospital No. 29 at the same point cared for gassed cases, Field Hospital No. 17, operating as a collecting hospital near the front, was located

at Septsarges, and Field Hospital No. 30, as a relay hospital on the long route to the army evacuation area, was established at Sivry-la-Perche.²³

On November 5 the triage (Field Hospital No. 25) was moved to Septsarges, on the 8th to Bantheville, and on November 10 to Dun-sur-Meuse. Field Hospital No. 29, the gas hospital, left Bethincourt on November 5 and operated at Bantheville November 8-10. Field Hospital No. 17 operated at Septsarges until November 4, when it moved to Madeleine Ferme and operated there as a collecting hospital until November 10. Personnel and tentage from this hospital also were used at dressing stations at Cunel, Aincreville, Douillon, Dun-sur-Meuse, and Milly-devant-Dun. Field Hospital No. 30 closed, on November 1, at Sivry-la-Perche.²⁴

Division medical supply dumps were located successively at Bethincourt, Septsarges, and Dun-sur-Meuse.²³

Evacuation routes remained the same as at the beginning of the attack until November 8, when a new route was opened, railway communication having been established to Varennes. Evacuations were then made through the triage hospital at Bantheville and later through the evacuation hospital established at that place. Roads on the right bank of the Meuse were not completely cleared of the enemy until after cessation of hostilities, but thereafter patients were evacuated from Dun-sur-Meuse direct to hospitals in the vicinity of Verdun.²³

The triage reported the following admissions from the 5th Division during this phase:

Date	Wounded	Neuro-psychosis	Gassed	Sick	Injured
Nov. 1.....	49	0	22	21	2
2.....	32	.....	9	47	6
3.....	19	.....	4	64	2
4.....	80	.....	1	38	10
5.....	302	1	1	41	7
6.....	328	.....	6	41	12
7.....	83	3	12	57	12
8.....	58	1	1	40	4
9.....	29	.....	2	57	4
10.....	236	1	2	57	12
11.....	104	.....	2	53	1
12.....	9	0	0	18	2

The following is abstracted from the Medical Department report of the 5th Division and from answers to a questionnaire addressed to the division surgeon after the armistice:

Mere recital of the fact that certain hospitals operated at certain times and at certain places and that they cared for a specified number of cases, gives little account of the immense amount of work done and the difficulties encountered and overcome. Obstructions which appeared insurmountable were everyday matters. Frequently, for example, it appeared impossible to clear a field and to transport the sick and wounded to hospitals where they could be given suitable treatment: but with each new emergency a solution was found or was made. Throughout the entire period of operations in this offensive the flow of wounded to evacuation and base hospitals was uninterrupted.²⁵

The efficiency of service rendered was the result of support given by army and corps surgeons, cooperation given by associated divisions, cooperation of other divisional staff departments, study of the military situation, with anticipation of probable emergencies, and hearty cooperation and untiring energy shown by each individual officer and enlisted man belonging to the Medical Department. An immense amount of hard labor was required, and men remained on duty night and day continuously throughout periods of greatest activity. Wagoners, ambulance and truck drivers at times worked continuously for 48 hours transporting the wounded under most trying circumstances.²⁵ At no time was there sufficient truck transportation to provide for rapid movement of the sanitary train in case of emergency, and efficiency was sometimes hampered because of this. Under such circumstances, however, it was possible to "carry on," though often extremely difficult. Often it was necessary to nurse and coax along motors which under ordinary circumstances would have been given up as hopelessly out of repair. Throughout the entire period the sanitary train was operated with from one-fourth to one-half its authorized truck tonnage, and much of what was used was in bad condition. This shortage of truck transportation was general. Other trains of the division labored under the same handicap.²⁶

Of 9,435 patients transported to field hospitals of this division during this operation, 200 were carried in animal-drawn ambulances. During the first phase there was no opportunity whatever for the use of these vehicles, for roads to the front were in full view of the enemy and were subject to shell and machine-gun fire. Motor ambulances, which ran at high speed and thus diminished the time of exposure to enemy fire, therefore were used exclusively at this time, but after the division crossed the Meuse, animal-drawn vehicles were used to move patients from several places in the woods at a distance over routes impassable for motors.²⁷

During the comparatively short time in which mule-drawn ambulances were used, 16 animals were killed. During the entire operations only two motor ambulances were put out of operation by enemy fire, and one of these was subsequently repaired. The high percentage of losses in animal-drawn transportation was attributed to slow speed, long exposure to enemy fire, the large target presented by an ambulance and its double team, and the vulnerability of animals.²⁷

Throughout the period of the engagement, hot meals were served from ambulance dressing stations. From the kitchen of one such station 3,000 meals were served in 48 hours. Many men exhausted in combat were able to return to the front after having been given nourishment and a short rest.²⁸

Forty-nine cases of psychoneuroses were received in hospitals of the 5th Division. That the number of these was so small was due chiefly to the fact that a trained psychiatrist was on duty at the advance collecting hospital and also to the fact that fear was differentiated from "shell shock." Individuals simulating neuroses or psychoses were returned at once to duty.²⁹

During this operation, October 12 to November 12, 2,330 cases of sickness were passed through the triage. Almost all of these were cases of serious

illness resulting from exposure, exhaustion, malnutrition, and the use of contaminated water. Everyone had bronchitis and nearly everyone has gastroenteritis with diarrhea; but only those who were absolutely unable to go forward were sent to hospital. Many patients received at hospital were completely exhausted, their resistance was lowered, and a number of patients admitted for influenza or bronchitis subsequently developed pneumonia.²⁹

Wounds of the upper extremities were operated only when the injury was so severe as to necessitate amputation or when hemorrhage demanded ligation of vessel.³⁰

As the vast majority of patients with wounds of the lower extremities presented a profound degree of shock, especially in all compound fractures of the femur in severe injuries of the knee joint, it became necessary to hold them for several hours, unoperated. Such patients were ordinarily given normal saline solution intravenously, though several were given citrated blood. Gas gangrene developed in four cases. The only patients operated at the triage were those who could not possibly be transported within the time limit required by orders (15 hours) or whose wounds were so severe that immediate operation was imperative.³⁰

The length of time that wounded remained in field hospitals varied from 1 to 48 hours, depending usually upon the length of time before transportation to the rear became available. At a rough estimate this averaged about 4 hours. Field hospital bed capacity varied from 200 to 300.³¹

During the first week of the Meuse-Argonne operation the division surgeon permitted the operating team at the triage to operate only two definite types of cases, namely, the so-called "sucking chest" cases and all cases of hemorrhage. Later, owing to the length of time elapsing between the receipt of wound and arrival at triage, all cases were operated which for any reason could not be transported to the nearest evacuation hospital within 15 hours after being wounded. The number operated on at the triage during this period was 75, which were classified as follows: Abdominal, 20 per cent; chest, 27 per cent; head, face, and neck, 9 per cent; upper extremity, 18 per cent; lower extremity, 26 per cent.³² The abdominal cases comprising those presenting intestinal perforations, hemorrhage, or extensive lacerations of the liver. Three cases with the intestines presenting through ventral wounds and one case of laceration of left external iliac vein were received.³² The chest cases operated were the "sucking chest wounds," and two cases of hemorrhage. Head, neck, and face cases included only those with severe hemorrhage, necessitating ligation of the principal blood vessels. No brain cases were operated at the triage.³²

THE 32D DIVISION^b

On November 1, the 32d Division passed from the reserve of the Fifth Corps to that of the Third Corps, serving in that capacity until November 10. On November 6, however, the 128th Infantry reentered the line as a unit of the 5th Division, operating east of the Meuse in the vicinity of Dun-

^b For map of activities of this division for this period, see Plate XLVIII.

sur-Meuse. On the night of November 9-10 the remainder of the division crossed the Meuse and entered the line, attacking on the morning of the 10th, east of Breheville and northeast of Peuvillers; on the morning of the 11th a continuation of the attack was halted by the signing of the armistice.³³

MEDICAL DEPARTMENT ACTIVITIES

On November 8, the sanitary train was disposed as follows: Ambulance Company No. 125, Bois Chehem, near Montfaucon; Ambulance Company No. 126, Septsarges, with ambulance head at Cunel; Ambulance Company No. 127, on Avocourt—Very road, near Cheppy road; Ambulance Company No. 128, distributed to Infantry regiments, with three ambulances assigned to the 158th Artillery Brigade; Field Hospital No. 125, Septsarges, in reserve; Field Hospital No. 126, Bois Chehem, in reserve; Field Hospital No. 127, Ivoiry; Field Hospital No. 128, Sivry-la-Perche, for the sick; medical supply unit, Bois Chehem.³⁴

The surgeon of the Third Corps directed that the train should not function until its triage could be established on the east bank of the Meuse, and that meanwhile its casualties should be cared for in triages of the 5th and 90th Divisions, at Septsarges.³⁴

Next day, November 9, sanitary train units were disposed as follows: Ambulance Companies No. 125 and No. 126 were ordered to Dun-sur-Meuse, where the former was held in reserve, the latter moving from that point to Vilosnes to establish an ambulance head. Field Hospitals No. 125 and No. 126 were also ordered to Dun-sur-Meuse, the former to establish, by 4.30 p. m. of the 10th, a triage for nontransportable wounded; No. 126 to care for gassed patients. Other units retained their former locations for a short time, but were soon moved forward. A dressing station was established at Haraumont November 10, with ambulance heads at Ecurey and Breheville, whence evacuations were rapid and satisfactory. At Dun-sur-Meuse the triage was operated by Field Hospital No. 127. Field Hospital No. 125 cared for nontransportable patients and No. 126 for the gassed. The units here used tents, semipermanent barracks, and other buildings, facilities being superior to any enjoyed by them heretofore during this offensive.³⁴

During this time the triage of the 5th Division admitted the following casualties:³⁴ Wounded, 212; neurosis, 1; gassed, 26; injured, 1; sick 111; total, 351.

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- (3) Report of Medical Department activities, Third Army Corps, by Col. J. L. Bevans, M. C., corps surgeon, Third Army Corps, undated, 38. On file, Historical Division, S. G. O.
- (4) Report of Medical Department activities, 5th Division, A. E. F., prepared under the direction of the division surgeon, 5th Division, undated, Part I, 48. On file, Historical Division, S. G. O.

- (5) Report of operations, 90th Division, Meuse-Argonne operation, undated.
- (6) F. O. No. 13, 90th Division, October 29, 1918.
- (7) F. O. No. 18, 90th Division, November 4, 1918.
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- (9) Ibid., Part I, 60.
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- (11) Ibid., Part I, 61.
- (12) Ibid., Part I, 65.
- (13) Ibid., Part I, 68.
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- (15) Ibid., Part I, 72.
- (16) Ibid., Part I, 80.
- (17) Ibid., Part I, 81.
- (18) Ibid., Part I, 85.
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- (30) Ibid., Part IV, 27.
- (31) Ibid., Part IV, 31.
- (32) Ibid., Part IV, 26.
- (33) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College, 1700 (32d Division).
- (34) Report of Medical Department activities, 32d Division, A. E. F., prepared under the direction of the division surgeon, 32d Division, undated, Part I, 12. On file, Historical Division, S. G. O.

CHAPTER XXXIII

THIRD PHASE—Continued

ACTIVITIES OF THE AMERICAN DIVISIONS ATTACHED TO FRENCH CORPS EAST OF THE MEUSE

Only those of our divisions which were attached to the French Corps east of the Meuse will be considered here.

THE 79TH DIVISION

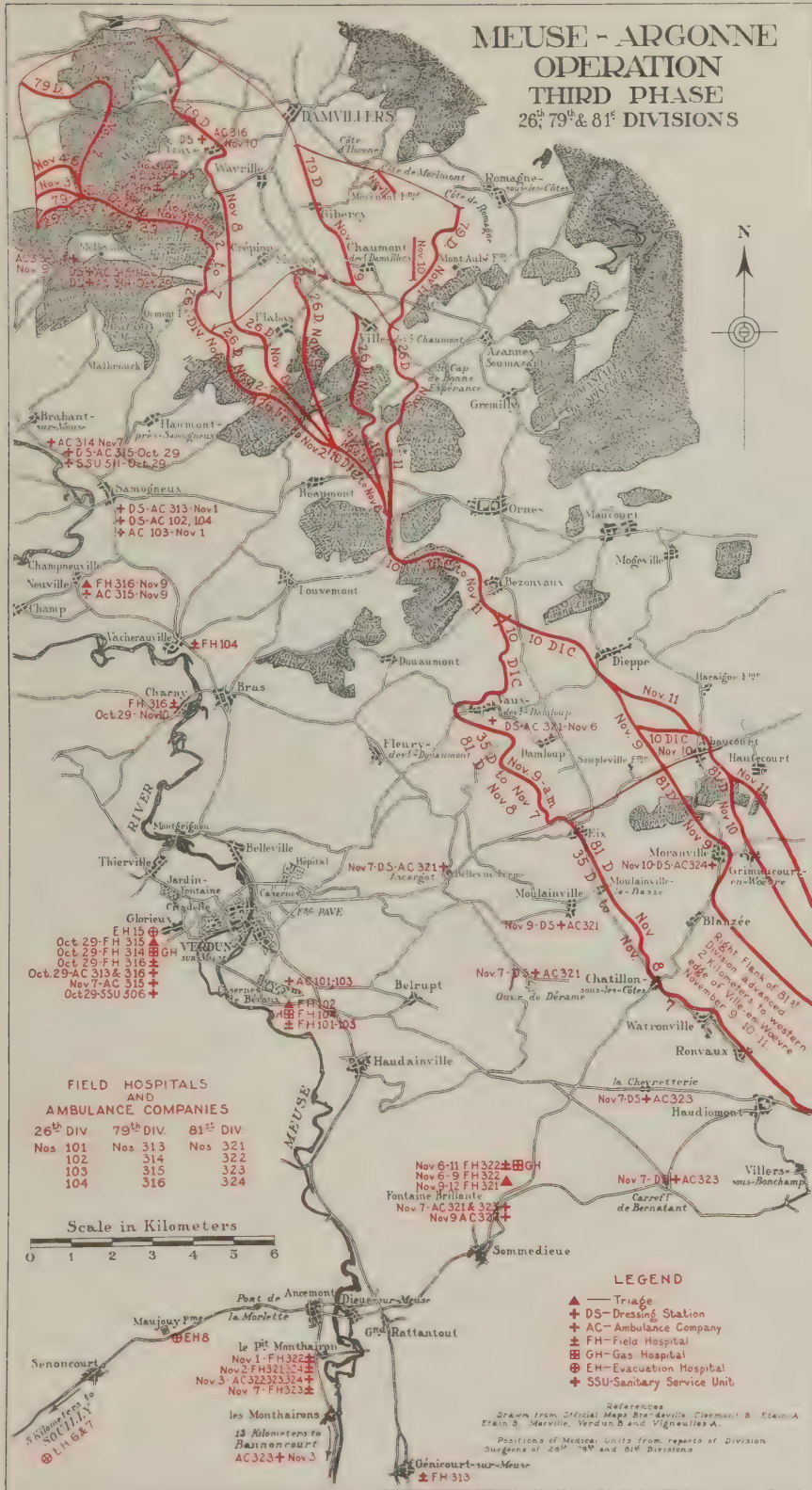
After it was relieved, on September 30, by the 3d Division, the 79th Division was then transferred to the Third Army Corps and acted as corps reserve until the night of October 3-4, when it marched to the zone of the French Second Colonial Army Corps and was attached to that corps.^a On the night of October 7-8 it relieved the 26th Division in the Troyon sector, holding an outpost position on the plane of the Woevre. No offensive action was taken, although the troops were subjected to constant shelling by the enemy. Beginning October 23, the division was relieved by the 33d Division and proceeded by marching to the Grande-Montagne sector, where it relieved the 29th Division on the nights of October 28-29, 29-30, and a part of the 26th Division on the nights of October 31-November 1, and November 1-2. In this sector the 79th Division was placed under the command of the French Seventeenth Army Corps, and later under the French Second Colonial Army Corps. On November 3 the division opened the final offensive by an attack to the north, with its left flank, and on November 6, after severe fighting, troops had advanced as far as the crest of Hill 378 (La Borne de Cornouiller). The attack changed on November 8 to an easterly direction, and the heights from Ecurey to Crepion were captured; that night the division sector elements were changed to extend from Etraye to Moirey. This required elements of the division at Ecurey to execute a flank march of about 4.5 km. (2.7 miles) at night, through thick underbrush and woods, in order to be in position for the attack at 6 a. m. the following morning. On November 9 the towns of Crepion, Wavrille, and Giberey were taken, and also Etraye and Moirey, in conjunction with elements of the divisions on the right and left: before night of November 10, Chaumont-devant-Damvillers and Hill 319, northeast of the town, had been taken.¹

^a During the period October 12-23 the 79th Division, as a part of the French Second Colonial Corps, was a part of the Second Army. However, the description of its activities is given at this time for convenience, especially because during the time it was in the Second Army it took no offensive action.



FIG. 86.—Field Hospitals No. 314 and No. 315, 79th Division, at Ferme Notre Dame de Palancix, Meuse

MEUSE - ARGONNE OPERATION THIRD PHASE 26th 79th & 81st DIVISIONS



Battle lines, taken from Final Report, Gen. John J. Pershing, September 1, 1919, are approximate.

MEDICAL DEPARTMENT ACTIVITIES

On the arrival in the Troyon sector the sanitary train relieved corresponding units of the 26th Division on October 8, 1918. The disposition of the units being as follows: Field Hospitals, Nos. 313, 314, 315, and transportation section of Ambulance Company No. 316 at Ferme Notre Dame de Palameix; Ambulance Companies No. 313 and No. 314, and United States Army Ambulance Service Section No. 506 at Dommartin-la-Montagne; Ambulance Companies No. 315, No. 316, and United States Army Ambulance Service



FIG. 87.—Dressing station, operated by Ambulance Company No. 316, 79th Division, Les Eparges, Meuse

Section No. 502 at Les Eparges, and Field Hospital No. 316 at Ambly-sur-Meuse. Dressing stations were established at Dommartin and Les Eparges. Field hospitals functioned as follows: Field Hospital No. 313 for skin and venereal; No. 314 for gassed; No. 315 triage; No. 316 for sick.²

As this sector was relatively inactive, the number of wounded was not large. Roads were good, and the evacuation of casualties proceeded without any delay. On the night of October 14 Les Eparges was subjected to a violent bombardment of gas, causing the withdrawal of the medical units there. Ambulance Company No. 315 located in some barracks northwest of Vaux-les-Palameix. Ambulance Company No. 316 moved to Notre Dame de Palameix, and United States Army Ambulance Service Section No. 502

to Dommartin-la-Montagne. Casualties in this bombardment were 1 killed and 17 moderately gassed. On October 13 Field Hospital No. 313 established a hospital for influenza cases at Troyon-sur-Meuse. On the 18th the United States Army Ambulance Service Section No. 502 was relieved by Section No. 511.²

The units of the train remained in these locations until October 23, when they were relieved by similar units of the 33d Division, and proceeded to Troyon-sur-Meuse, with the exception of Field Hospital No. 316, which remained in operation at Ambly until 25th. Field Hospital No. 313 evacuated its patients to No. 316 and proceeded to Genicourt-sur-Meuse.

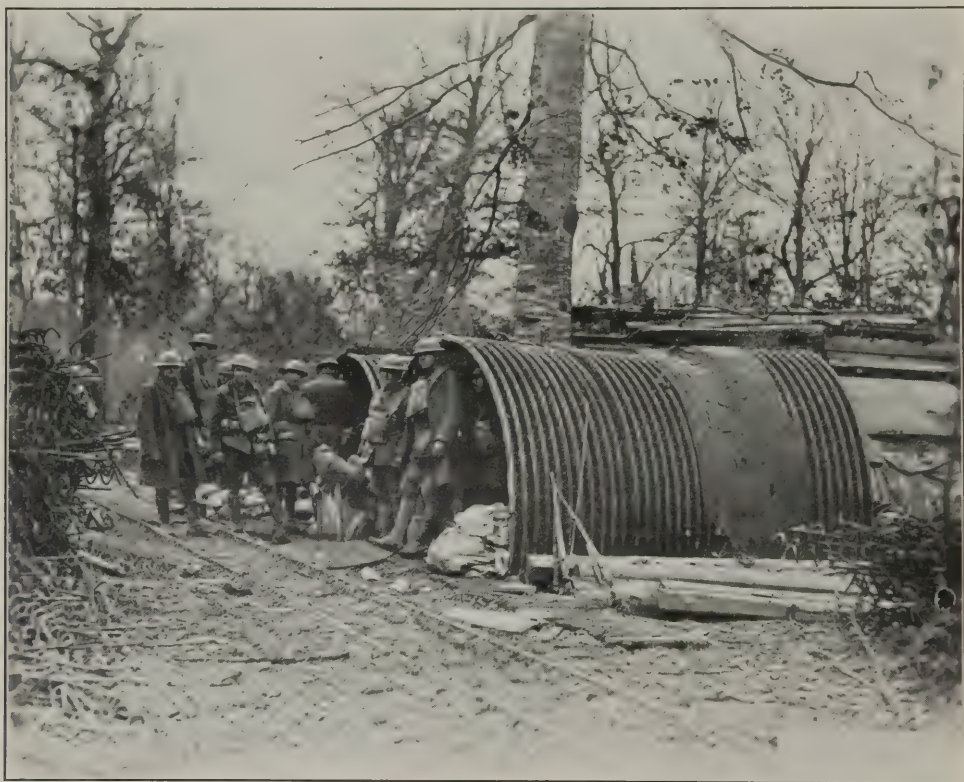


FIG. 88.—Aid station, 315th Infantry, 79th Division, Bois de Consenvoye, France, November 8, 1918.

On the 24th the train moved to Faubourg-du-Pave, where it was billeted until October 29. Here Field Hospital No. 316, on October 25, opened a hospital for the division sick. On October 27 the sanitary train proceeded to the Grande-Montagne section.² Here the advance stations were well located and fairly safe, with the result that wounded were promptly given first aid and evacuated. An ambulance pool was organized at a point where cover was available close to two regimental aid stations, whereby their evacuation was greatly expedited. Wheeled litters, used by this division for the first time, were employed with very satisfactory results. The units of the sanitary train, on October 30 and November 1, relieved like units in the 29th

Division and were disposed as follows: Ambulance Company No. 313 took over the dressing station near Samogneux. Its evacuation service assisted by wheel litters via the Ormont-Ferme—Samogneux road, though this was constantly subject to shell fire; Ambulance Company No. 315, with United States Army Ambulance Service Section No. 511, operated a dressing station at a rock quarry on the Samogneux—Brabant road, and Ambulance Company No. 314 an advance dressing station north of Brabant on the Molleville Ferme road, the remainder of this company serving as litter bearers. Ambulances could not reach regimental and battalion stations because of shell fire, for the enemy at this time gave unusual attention to shelling the roads, and this actually caused a disproportionate number of casualties in the supply and evacuation services. Two animal-drawn ambulances were assigned to each Infantry battalion in support. On the outskirts of Charny a station for slightly wounded was established by one officer and six men from Field Hospital No. 316.²

Although casualties were heavy, evacuations were prompt, the average time elapsing between receipt of wounded and arrival at hospital being about three hours. Roads were very rough but not crowded. On November 4, 41 Ford ambulances were assigned to the division, replacing United States Army Ambulance Service Sections No. 511 and No. 506, but throughout the action returning trucks transported slightly wounded, and in emergencies the trucks of the sanitary train were also used for that purpose.³ On November 7 Ambulance Company No. 316, less animal-drawn vehicles, relieved Ambulance Company No. 314 at its advance dressing station, and the latter relieved Ambulance Company No. 315, which moved to Glorieux for a rest. Meanwhile evacuation was carried on by Ambulance Company No. 313, in reserve.⁴

Field Hospital No. 313 had been established at Genicourt-sur-Meuse, where it received the sick, but the other field hospitals, with United States Army Ambulance Service Section No. 506, were congregated at Glorieux. There Field Hospital No. 315 operated the triage, Field Hospital No. 314 cared for the gassed, and Field Hospital No. 316 was in reserve. Both field hospitals functioning were located with Evacuation Hospital No. 15 in an old French hospital building—an arrangement which facilitated transfer of the seriously wounded to an institution where they could receive immediate and thorough care.²

By November 9 the lines of evacuation had been lengthened by the rapid advance of the troops, and the two roads Molleville Ferme—Brabant and Ormont Ferme—Samogneux had become so rough that night driving was both difficult and dangerous. Therefore, Field Hospital No. 316 was moved from Glorieux to a point near Neuville, where it established a triage. Ambulance Company No. 314 advanced its dressing station to west of Molleville Ferme, accompanied by Ambulance Company No. 313, which furnished litter bearers to clear the aid stations. The other units remained as before except that six ambulances of Ambulance Company No. 315 were moved to the triage. Evacuations from the front were now less difficult, though the route to the rear was longer.⁴

On November 10 the station for slightly wounded at Charny was closed. The dressing station of Ambulance Company No. 314 was advanced to a German barrack on the Brabant-sur-Meuse—Etraye road, and the dressing station of Ambulance Company No. 316 to the vicinity of Etraye.⁵

On November 11 it was decided to move Field Hospital No. 314 to the German barracks occupied by the dressing station of Ambulance Company No. 314, and the order directing this movement was issued the next day. Roads were now much better, traffic control was excellent, and evacuations were very satisfactory. Because of the roughness and narrowness of the roads the Ford ambulances were especially serviceable in this sector.⁵

THE 26TH DIVISION ^b

From November 1 to 7, no advance by the 26th Division was made. During this period a number of reliefs from the front line were made, and troops improved their positions and organized strong points. Reconnoitering patrols were sent out, raids made, and gas concentrations and harassing artillery fire delivered, but there was relatively small movement of the line until November 8. Such advance as was made on and after that date was in a generally easterly direction, the southern end of the line being pivoted, at first, north of Beaumont, and later, when the division front was extended, south of it, near Les Fosses. Information was received, on November 8, that the enemy was withdrawing. He was closely pursued, in the face of stubborn machine-gun resistance and scattered artillery fire. The advance continued until the armistice, with progressive general increase in speed, despite opposition from certain strongly organized positions such as Ville-devant-Chaumont, Herbebois, Le Chaume, and Le Cap de Bonne Esperance. When hostilities were suspended by the armistice, the division front, facing eastward, extended between 5 and 6 km. (3.1 to 3.7 miles) in a general north and south direction, from just east of Ville-devant-Chaumont, to a point near Le Chaume.^{6, 7}

MEDICAL DEPARTMENT ACTIVITIES

As the 26th Division formed the pivot on which the entire army to the westward of it moved, its advance was relatively slight, especially on its right, and it was unnecessary to move the organizations of the sanitary train, except that ambulance heads were gradually advanced. The location of the Medical Department units remained as given in the history of the division during the second phase of this operation.

THE 81ST DIVISION ^b

On the night of November 6-7, the 81st Division relieved the 35th Division in the Sommedieue sector, which at that time was under the command of the French Seventeenth Corps. On November 7, however, the division passed from the French Seventeenth to the French Second Colonial Corps.

^b For map of activities of this division for this period, see Plate XLIX.

At 8 a. m., on the 9th, after a short artillery preparation, with two regiments in line and two in support, positions in the marshy plain of the Woevre which the Germans had fortified during their prolonged occupancy by numerous concrete machine-gun nests and elaborate wire systems were attacked. Ville-en-Woevre was a particularly strong, heavily fortified position, which had resisted capture during the St. Mihiel operation. The Artillery brigade gave the infantry all possible support during this action, but the enemy was able to oppose the advance by guns which outranged those of our troops. During these operations the division captured the fortified villages of Moranville, Grimaucourt, and Abaucourt, and occupied the woods Les Clairs Chenes and La Noire Haie and Le Grand and Le Petit Cognon. When hostilities ceased the troops had advanced over the Hindenberg line and had reached the main defense of Hautecourt, having pushed back the enemy from 2 to 5.5 km. (3.4 miles).⁸

MEDICAL DEPARTMENT ACTIVITIES

When the 81st Division relieved the 35th, dressing stations were established by Motor Ambulance Company No. 321 at Escargot and Derame and by No. 323 at La Chevetterie and Bernatant. Field Hospital No. 322, the triage and gas hospital, occupied Adrain barracks at Fontaine Brillante. Field Hospitals No. 323 and No. 324 were at Les Petits Monthairons in the château and in Adrain barracks. Field Hospital No. 321, with Ambulance Companies No. 322 and No. 324, was held in reserve at Les Petits Monthairons.⁹

On November 9, Field Hospital No. 321 was ordered to take over the triage, and Field Hospital No. 322 functioned as a gas hospital, while Field Hospital No. 323 was held in readiness to "leapfrog" the triage and establish a hospital in case of advance.¹⁰ The dressing station of Ambulance Company No. 321, at Escargot, moved to Moulainville and Ambulance Company No. 322 marched to Fontaine Brillante, where it assisted in evacuation from the front lines. On November 10 Ambulance Company No. 324 established a dressing station at Moranville.¹⁰

One motor ambulance company and a section of the animal-drawn ambulance company was attached to each Infantry regiment in the front line, with orders to keep constantly in touch with the respective regimental surgeons. The animal-drawn vehicles were used only over routes that could not be traversed by motors. Because of the wet condition of the ground, there was a constant mist, which permitted ambulances to go to the battalion aid stations. In some portions of the sector information concerning the proper roads to use could be obtained only by driving over the road and mapping out the proper course for vehicles. Regimental and ambulance company dressing stations were combined and located in the most advantageous positions and ambulances were stationed along the front.¹⁰

Because ambulances could remove patients direct from battalion stations, evacuation was prompt, and the forward shipment of supplies was facilitated. Ambulances were also in direct touch with the divisional reserve and visited artillery areas at regular intervals.¹⁰

Immediately following the cessation of hostilities searching parties from the ambulance companies were sent over the field to bring in wounded. By 10 p. m. of November 11, all had been recovered and cleared from the triage.¹¹

The triage report, November 9 to 11, gave the following figures: Total number admitted to triage, 1,040; wounded in action, 537; wounded accidentally, 30; gassed, 242; war neurosis, 38; sick, 193. All gas casualties were caused by arsine, but none was of such severity that the patient required more than two days' hospitalization.¹¹

THE 33D DIVISION

Upon being relieved in the Verdun sector, by the French 15th Colonial Division, on the nights of October 20, 21, and 22, the 33d Division proceeded to the Troyon-sur-Meuse sector, where it relieved the 79th Division, the relief being completed on the night of October 25-26. The line now held extended approximately from Fresnes-en-Woevre, southeastwardly, to Doncourt-aux-Templiers. On the night of October 27-28, this line was extended southeastwardly to the edge of Bois de Rebois, southeast of Woel. Operations of the 33d Division, in this sector, beginning with daily and nightly patrols, developed a number of important raids, among them the raid of November 7, on Chateau et Ferme d'Aulnois, and the two raids against St. Hilaire, on November 8 and November 9. On November 10, the German stronghold of Marcheville was captured; however, a counterattack of the enemy drove our troops back to the trenches southeast of the village. The enemy was driven out of Bois des Hautes Epines, Bois de Warville. The southern portion of the formidable Bois d'Harville was taken and the Kriemhilde Stellung crossed.¹²

On November 11, Chateau et Ferme d'Aulnois had been taken, and Marcheville recaptured, when an order to cease hostilities put an end to the advance. The line now extended approximately from the crossroads northwest of Chateau et Ferme d'Aulnois—Riaville—Marcheville—St. Hilaire—north edge of Bois de Warville and Bois des Hautes Epines to Ferme des Hauts Journaux. The southern portion of Bois de Warville, which had been wrested from the enemy on the preceding day, was given up.^{12, 7}

MEDICAL DEPARTMENT ACTIVITIES

When the 33d Division took over the line in the Troyon sector, the disposition of its sanitary train was prescribed by Field Order No. 18, Headquarters 108 Sanitary Train, published October 24, as follows:

Pursuant to instructions from the division surgeon, the following movements of units of the sanitary train will be accomplished in connection with the relief of the 79th Division, U. S., in the Troyon sector:

1. Field Hospital Hq. will move from Faubourg-Pauve to the vicinity of the triage near Ferme de N. D. de Palameix.
2. A. C 129, company Hq., and remaining personnel will move from Faubourg-Pauve to the location of the dressing station at Dommartin la Montagne early October 25, 1918.
3. A. A. S. 600 will move from Faubourg-Pauve to Troyon and take over the evacuation of the triage.

4. F. H. 130 will move from Genicourt to Troyon early on October 25 and will continue in operation as the divisional sick collecting station. A holding party will be sent out not later than 7 a. m. to secure the location. An advance section will proceed at once to the new location and go into operation in order that there will be no cessation of function as the divisional sick collecting station. A guide will be left at Genicourt to inform ambulances as to the new location.

5. The mobile laboratory will move with F. H. 130.

6. Train Hq. and ambulance section Hq. will move from Faubourg-Pauve to Troyon early on October 25th.

7. F. H. 132, A. C. 130, A. C. 132, and camp infirmaries will remain at Faubourg-Pauve until further orders.

On October 30, the sanitary train was disposed as follows: Headquarters of the train and of its ambulance company section, Troyon; Ambulance Company No. 129, Dommartin; Ambulance Companies No. 130 and No. 132, Troyon; Ambulance Company No. 131, dressing station near St. Maurice, serving the right sector.

Headquarters of the field hospital section, with three units of its command, was located at Ferme de Notre Dame de Palameix, where Field Hospital No. 131 operated the triage, Field Hospital No. 130 the gas hospital, and Field Hospital No. 129 was in reserve. Field Hospital No. 132 at Ambly conducted a division sick collecting station with triage function. On November 8, Field Hospital No. 130 moved to Creue, where it continued the care of gassed patients, and the next day Field Hospital No. 129 moved to Creue to prepare to assume triage duties.¹³ On November 8, Field Order No. 23 of Sanitary Train No. 108 was issued, reading as follows:

1. F. H. 129, at Creue, will go into operation as a triage at 6 a. m. Nov. 9, 1918.

2. F. H. 131 will close as a triage and go into reserve in its present location as soon as the redirection of the evacuation of the forward area has been accomplished.

3. F. H. 130 will open a gas hospital at Creue at 6 a. m. Nov. 9, 1918, with the equipment and personnel now at that point. This personnel and equipment will be supplemented from the larger detachment at Ferme de Notre Dame de Palameix, as fast as the conditions permit, leaving, if possible, a working gas section to go into reserve with F. H. 131. No special evacuation of the gassed patients need be made.

4. Triage reports will be made for 12-hour periods, such reports to reach the division surgeon's office not later than 7 a. m. and 7 p. m. daily.

5. The forward area will be evacuated to the triage (F. H. 129) at Creue after 6 a. m. November 9, 1918.

6. The division sick and back area casualties will be evacuated as before to F. H. 132 at Ambly.

7. Evacuation points for the division are as follows:

Seriously wounded (nontransportable): To Mobile Hospital # 39, between Heudicourt and Chaillon.

Slightly wounded: To Evacuation Hospital 13, at Commercy. (NOTE.—Evacuation Hospital 18 at St. Mihiel will soon be available.)

Neurological: To Neurological Hospital # 1, at Varvinay.

Gassed cases: To Evacuation Hospital 13.

Sick: To Evacuation Hospital 13.

ALTERNATIVES

All classes of cases: To Evacuation Hospital 12, at Royaumeix, or Evacuation Hospital # 1, at Sebastopol, 5 kilos north of Toul.

8. A. C. 132 will gradually take over the dressing station and the evacuation of the left sector, relieving A. C. 129. A. C. 130 will evacuate the triage at Creue in accordance with par. 7. Hq., A. C. 131, will move to Creue as soon as the C. O. has arranged for billets.

9. The D. A. C. (director of ambulances) will arrange for the evacuation of F. H. 132. at Ambly.

10. The D. F. H. (director of field hospitals) will arrange all details concerning the field hospital section.

11. The division specialists will function with the triage at Creue unless otherwise ordered.

The other orders issued controlling the sanitary train during the operation of the Second Army were the following, promulgated by the commanding officer, Sanitary Train, November 9 and 10:

Field Order No. 24:

1. F. H. 132 will evacuate its sick on the afternoon of Nov. 9, in accordance with par. 7, F. O. 23, and will continue to function on a smaller scale, but will not hold its patients longer than necessary to properly conserve evacuation facilities.

2. F. H. 130 will evacuate its gas hospital at Ferme de N. D. de Palameix early Nov. 10 and will prepare this section to go forward with F. H. 131.

3. The D. A. C. will arrange transportation for the evacuation proposed in pars. 1 and 2.

4. F. H. 131 will be prepared for a contemplated move to Thillot at an early date.

5. The division tuberculosis specialist will function with the division sick collecting station until otherwise ordered.

Field Order No. 26:

1. A. C. 129 will move with the northern pursuit column (65th Brigade). The company will be divided for action. One half, with light dressing station equipment and four or five ambulances, to move behind the advance guard. The other half, with full dressing station equipment, rations, etc., will follow the main body. These combat elements will join the pursuit column along the St. Remy—Herbeuville road before the H hour. The mission of A. C. 129 will be to serve the 65th Brigade, particularly after it has passed the sphere of action of A. C. 132. It is contemplated that a dressing station will eventually be established in the vicinity of St. Hilaire—Butgneville or Harville. The axis of march of the north column will be St. Remy—Herbeuville—Hannonville-sous-les Cotes—Wadonville [-en-Woevre]—St. Hilaire—Maulotte—Allamont.

2. A. C. 130 will move with the southern pursuit column (66th Brigade). The company will be divided for action. One half, with light dressing station equipment and four or five ambulances, to move behind the advance guard. The other half, with full dressing station equipment, rations, etc., will follow the main body. These two elements will join the pursuit column near St. Maurice along the Deuxnouds—St. Maurice road. The mission of A. C. 130 will be to serve the 66th Brigade, particularly after it has passed the sphere of action of A. C. 131. It is contemplated that a dressing station will eventually be established at or between Woel and Jonville. The axis of march of the south column will be St. Maurice—Woel—Jonville—Hannonville-au-Passage.

3. A. C. 132 will serve the left sector as long as practicable using its horse ambulances in the region of impassable roads for relaying to the motor ambulances. It may become advisable, as the pursuit lengthens, to evacuate in part or whole to the dressing station of A. C. 131 in the rear of St. Maurice.

4. A. C. 131 will serve the right sector as before and as far forward as is practicable.

5. The establishment of a triage and gas hospital at Thillot is contemplated for F. H. 131 and a gas section of F. H. 130. These units will hold themselves in readiness for immediate action and will send forward a holding, cleaning, and billeting party.

Plans outlined in these orders were carried out as intended except those which were to be applied later, including the establishment of dressing stations after objectives were secured. Battle activities ceased, of course, with the armistice.

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- (3) Ibid., 14.
- (4) Ibid., 22.
- (5) Ibid., 23.
- (6) Report of operations, 26th Division, Meuse-Argonne operation, undated.
- (7) Front-line maps, American battle monuments commission.
- (8) Operations report, 81st Division, Meuse-Argonne operation, January 17, 1919.
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- (10) Ibid., 21.
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- (12) Report of operations, 33d Division, Meuse-Argonne operation, March 17, 1919.
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CHAPTER XXXIV

GENERAL CONSIDERATIONS, MEDICAL DEPARTMENT ACTIVITIES

BATTLE CASUALTIES

The army chief surgeon reported as follows on battle casualties in the Meuse-Argonne operation:¹

Wounded, including 2,635 enemy prisoners.....	72,467
Gassed.....	18,664
Neurological cases (shell shock).....	2,029
Neurological cases returned to duty in 3 days, 1,204.	
Total.....	93,160
During this period the hospitals received medical cases.....	68,760
Died in hospital.....	3,528
Evacuations.....	143,051
Total.....	215,339

It is interesting in this connection to note that the neurological units returned to duty 59 per cent of the patients which they admitted.¹

PATIENTS CARRIED BY ARMY AMBULANCES

The following, which shows the number of patients carried by Army ambulance companies, etc., during the Meuse-Argonne operation, does not include those carried by the ambulance companies in corps sanitary trains, but it comprises those transported by United States Army Ambulance Service sections, evacuation ambulance companies, French sections, and French busses and trucks loaned to the army and operating in the service of its Medical Department.¹

	Trips	Recumbent patients	Sitting patients	Passengers	Kilometers
American sections:					
Sept. 26 to Oct. 14.....	9,800	19,000	21,000	2,200	290,000
Oct. 15 to Nov. 11.....	10,130	22,210	25,722	2,107	343,794
French sections.....	3,946	12,000	14,512		238,738
French busses.....	645		12,439		35,378
Total.....	24,521	53,210	73,673	4,307	907,910

Average number of patients per trip: Corps, 4.6; army, 4.8.

Average one-way haul: Corps, 22.4 km. (13.9 miles); army, 12.2 km. (7.5 miles).

Percentage of prone patients to total: Corps, 47.6; army, 46.

Average number of kilometers traveled by patients: Corps, 10.3 km. (6.3 miles); army, 5.4 km. (3.3 miles).

Average number of kilometers traveled per diem by Army ambulances, 19,737 km. (12,256.6 miles).

As stated in the description of the first phase of the operation, Army ambulances also transported 4,307 passengers during this operation (chiefly medical officers and nurses changing station, with their baggage).^{1, 2}

TRAIN EVACUATIONS

The following evacuations were made by train during the Meuse-Argonne operation:²

Total number of trains.....	408
Total evacuations.....	151,045
Total casualties.....	93,437
Total medical.....	55,698
Total prisoners (included in casualties).....	2,635
Total rations placed on trains.....	23,237

The large number of evacuations from the army area was necessitated by lack of an institution equivalent to the French *depôt des éclopés* provided to care for the slightly wounded, gassed, and sick who would be incapacitated for a period of 10 days or 2 weeks. The establishment of such a formation, with a capacity of 5,000 beds, was contemplated before the armistice was signed, but its organization had been delayed because there was no Medical Department personnel available for its operation. The army surgeon advocated establishment of such an institution for 10,000 patients. One section of it was to have been reserved for venereal cases—a perennial source of trouble at the front.³

As the towns in the rear of the army afforded no buildings such as those in Toul in the Second Army area, and tentage was unobtainable, it was necessary to evacuate these slightly wounded, disabled patients to the advance and intermediate sections, with consequent loss to the front of many thousands of men for a long period. This need, in turn, required an injudicious use of hospital trains and congestion of base hospitals, which would have proven calamitous had the offensive continued.³

ARMY HOSPITALS ^aMOBILE HOSPITAL NO. 1 ⁴

On September 24 Mobile Hospital No. 1 proceeded by truck from La Morlette to Les Claires Chenes, where it operated in huts, being one of the most advanced hospitals of that section. "The condition of the wounded received at this point was deplorable. Some wounds had not been dressed; many patients came in without having received antitoxin; some were exposed on the field for two or three days before arrival. Ambulances were sometimes 24 to 36 hours on the road bringing wounded from the dressing stations a few kilometers away. This was due largely to the frightful congestion of the roads."

This hospital was designated for nontransportable wounded, of whom 494 were received and upon whom 411 operations were performed. The problem of burying the dead proved a stupendous one, for from 12 to 20 patients

^a The reports from the different hospitals vary widely; some are complete and in detail, others fragmentary. The procedure here has been to set down what is considered valuable from each report. It has been quite impossible with the material at hand to balance the account.

died daily; and the soil being extremely rocky, the digging of graves was very arduous labor.

On October 7 the unit was ordered to Fromereville, Meuse, where on the 9th it was established in tents. The condition of the wounded received at this point was much improved; all had received antitetanic serum, and wounds were well dressed and splinted. Evacuation facilities from this point, however, were bad, and to relieve this situation use was made of a narrow-gauge railroad line which ran past the hospital to Souilly. Five cars were fitted up and equipped to carry eight wounded each, and a private of the Medical Department was assigned to each car under command of a medical officer who was in charge of the train. By this means 163 patients were moved, the time for the trip being about two hours. As the cars were light and tended to leave the rails, they were weighted with concrete blocks. At this station (Fromereville) 658 nontransportable wounded were admitted, and 627 operations were performed.

The unit moved on October 27 to Esnes, where it again occupied tents. As the troops at this time were moving forward rapidly, and the hospitals were in consequence left far behind, wounded were now received in a serious condition of shock, largely due to exposure and to the strain occasioned by the long rough ambulance rides, over almost impassable roads. At this location 419 nontransportable wounded were admitted, and 367 operations were performed.

On November 14 the organization moved to Bantheville, Meuse, and 10 days later to Varennes, Meuse.

MOBILE HOSPITAL NO. 2⁴

This unit had entrained August 25 for Souilly, Meuse, whence it moved to Rarecourt, Meuse, where it was stationed on the 28th. On September 24 it moved to Chateau de Salvange, near Rarecourt, Meuse, where it operated until November 5. It was then closed and all patients evacuated in preparation for a forward movement.

MOBILE HOSPITAL NO. 4⁴

This unit had formed part of the provisional evacuation hospital establishment at Trondes during the St. Mihiel operation but had received only slightly wounded while at that station.

When the Meuse-Argonne operation began, September 26, it was located at Villers-Daucourt, but later moved to La Grange-Aux-Bois, where it occupied a small French "ambulance," consisting of a few permanent buildings expanded by Bessonneau tents. Here it served the First Army Corps, receiving nontransportable cases. These numbered 464, upon whom 351 operations were performed. Because of shock and exposure, the wounded received here were in very serious condition. On October 27, the unit moved to Cheppy, Meuse, where it served the Fifth Corps.

Total admissions by this unit during the Meuse-Argonne operation were as follows: Wounded, 635; sick, 12; gassed, none; operations performed, 498; deaths, 265. At La Grange-aux-Bois and at Cheppy, 71 cranial injuries were operated, with 26 deaths. The unit also cared for 30 unoperated cranial cases, with 21 deaths. The unoperated cases that did not die were largely those with multiple wounds including minor scalp injuries who were admitted in shock. Eleven spinal cases were operated, with six deaths. In all its service (total) there were 841 surgical admissions to this hospital, of which 606 were non-transportable.

Nitrous oxide and oxygen proved of particular value in the anesthetization of shock patients and those in whom gas gangrene had developed. In these cases, as well as in others, these agents were found to be of great value. The conclusion was reached that there was a definite field for nitrous oxide and oxygen anesthesia for the treatment of serious cases, and for those who require but brief operations.

MOBILE HOSPITAL NO. 5⁴

From September 26 to 30 this unit, at Les Placys, admitted 108 cases, with 14 deaths; from October 1 to 31, inclusive, it had 839 admissions, with 119 deaths; from November 1 to 11, inclusive, 6 admissions, 3 deaths; total admissions, 953; total deaths, 136. Percentage of deaths, 14.27.

The following gives a summary of its work:

Operations

Head, penetrating-----	13	Gunshot wounds:	
Chest, penetrating-----	33	Head and neck, nonpenetrating----	17
Abdomen, penetrating-----	22	Chest, nonpenetrating-----	10
Amputations:		Abdomen, nonpenetrating-----	4
Upper extremity-----	11	Extremities-----	260
Lower extremity-----	24	Fracture, comminuted compound:	
Multiple wounds-----	239	Upper extremities-----	28
Fracture, comminuted compound:		Lower extremities-----	20
Femur-----	30	Blood transfusion-----	7
Knee joint-----	28	Appendectomy-----	1
		Dressings under nitrous oxide and	
		secondary operations-----	152

While at Les Placys this unit occupied six frame huts, in good condition, which were used as wards, and two Bessonneau tents, with a bed capacity of 38. Total bed capacity was 207, providing 48 feet of floor space per capita. Grounds were well drained, bathing facilities were excellent, and facilities for laundering clothes were adequate. The water supply was sufficient, but all water for drinking purposes was chlorinated.

The average strength of the command was 53 during the month of September. During October the average strength was 147, and during November, 162. On November 5 an acute shortage of medical officers was reported, with request that six more be assigned. At this time 10 officers were on duty with the unit, a number of whom were performing several dissimilar duties.

MOBILE HOSPITAL NO. 6⁴

In the latter part of August and the early part of September, 1918, Mobile Hospital No. 6 was organized by personnel from Base Hospital No. 5 and other sources. When ready for duty, on September 25, its strength was 8 officers, 20 nurses, and 83 enlisted men. From September 28 to October 16 it was stationed at Deuxnouds-devant-Beauzee, and from the latter date to January 4, 1919, at Varennes, being at both points in the service of the First Army.

At Deuxnouds the unit occupied wooden barracks recently vacated by the French, who had left them partially equipped. As these had a capacity of 200 beds and two operating rooms were provided, only a small amount of tentage was pitched. The unit was designated to care for injuries of the head, and its staff was increased by 6 surgical teams headed by neurosurgeons, a neurologist, a roentgenologist, 2 ophthalmologists, 4 ward surgeons, a mess sergeant, 3 cooks, and 9 privates. The hospital gradually expanded to a capacity of 390 beds, necessitating a temporary increase in its strength by details of French troops, Pioneer Infantry, and prisoners of war.

After it moved to Varennes, 7 km. (4.3 miles) behind the lines, Mobile Hospital No. 6 was attached to the First Corps. Here it cooperated with Field Hospital No. 162 in caring for the nontransportable wounded until the latter unit moved, after which Mobile Hospital No. 6 cared for this class of patients exclusively. Here tents and a portable building—too small for an operating room and therefore used as office—were erected. The operating teams and special officers formerly attached had been transferred, but the command was reinforced by additional enlisted personnel and at times by surgical, splint, and shock teams. Usually there were four and sometimes six teams operating.

The greatest problem encountered here was that of evacuation, for wounded had to be removed by ambulance over crowded roads to railhead; but by keeping well ahead of the situation the hospital never became crowded. During the first 48 hours of the third phase of the Meuse-Argonne operation many preoperative cases were sent to evacuation hospitals, but none were forwarded unless it was believed they could well endure the trip. When it became evident that nontransportable cases could not be sent from the front because of the great and rapidly increasing distance they would have to cover, all casualties received were operated. From October 17 to November 3 the time from receipt of wound to admission was seven hours. Preparations were made to advance the unit to Brieuillers-sur-Bar, but this was prevented by the armistice.

Forty-five per cent of the wounded admitted to this hospital were not operated, for this was not indicated in many of the cases admitted while the unit was at Deuxnouds, and a number of those admitted while it was at Varennes were either admitted dead or dying (32 cases) or were sent on for operation at the evacuation hospitals (135 cases). The following statistics were furnished.

1. Both stations, September 29 to November 11; 43 days:

Admissions:	
Sick	63
Gassed	4
Wounded—	
Operated	678
Not operated	567
	<hr/> 1, 245
	<hr/> 1, 312
	<hr/>
Deaths:	
Preoperative (including sick)	32
Postoperative	124
	<hr/> 156

Total mortality, 11.9 per cent.

2. Deuxnouds station (battle casualties received were gunshot wounds of head only) :

Operated	403
Nonoperated (including sick)	416
	<hr/> 819
Deaths	44

Mortality, 5.4 per cent.

3. Varennes station (nontransportable wounded) :

Operated	275
Not operated (including sick)	218
	<hr/> 493
Deaths	112

Mortality, 22.7 per cent.

Throughout its service this unit was complete in itself. It received, with few exceptions, only the cases it was designed to treat, for whose service its equipment proved entirely satisfactory. Injuries cared for were chiefly those of the brain, lungs, abdominal viscera, and multiple wounds or fractures which were in bad condition because of hemorrhage or shock. The most seriously wounded were transfused and anesthetized with nitrous oxide and oxygen. Blood donors were obtained in sufficient numbers.

MOBILE HOSPITAL NO. 8^a

In September, 1918, Mobile Hospital No. 8 was organized from personnel of Base Hospital No. 10 and casuals, the initial nucleus consisting of 4 medical officers, 20 nurses, and 30 enlisted men. On October 15, it relieved Mobile Hospital No. 6 (q. v.) at Deuxnouds-devant-Beauzee. This unit, like the unit it relieved, received head cases only. Among these the mortality was high, and the period of recovery among those cases which eventuated favorably was disproportionately long.

Toward the end of October, orders were received to admit no more patients, to evacuate all possible, and to prepare to move to a point near Varennes. All attached officers, except one surgical team and one facio-maxillary specialist, were relieved, and on November 3 the command moved to Exermont, leaving a small detail to care for patients not yet evacuated. This detail rejoined on the 5th, by which time the unit, now reinforced by three additional teams, was receiving patients. Evacuation to railhead was effected by Ambulance Companies No. 542 and No. 604, and occasionally by French ambulances. Surgical work slackened after the armistice, and on November 16 orders were received to admit no more patients, and canvas was gradually struck in anticipation of a move.

This unit, while at Deuxnouds, from October 16 to November 5, admitted 214 patients, with 23 deaths, and while at Exermont, from November 6 to December 2, admitted 368 patients, with 18 deaths.

EVACUATION HOSPITAL NO. 3⁴

Evacuation Hospital No. 3, after serving at Toul, was attached, from September 26 to October 1, to American Red Cross Military Hospital No. 114, at Fleury-sur-Aire, where it occupied a large French evacuation hospital. The plant was already equipped with the exception of the operating room, laboratory, and pharmacy. A large ward was turned into a 12-table operating room.

When the first phase of the operation began, wounded began to arrive in great numbers, over 1,400 being received in one day. Many preoperative trains were dispatched, only cases requiring immediate surgical attention being operated. Generally speaking, the wounded were in a poor condition when received, and a large percentage of wounds were from 36 to 72 hours old.

On October 1, the unit left for Mont Frenet, where it served the 2d and 36th Divisions attached to the French Fourth and Fifth Armies in the Champagne sector, west of the Meuse-Argonne battle field. On November 9 it left this station and moved to Fontaine de Routon, where it arrived the next day for service of the First Army.

EVACUATION HOSPITAL NO. 4⁴

On arrival at Fontaine de Routon, Evacuation Hospital No. 4 occupied some temporary structures, but erected no tentage before the night of September 25. It then pitched all its tentage, and in four hours had a large part of the ward equipment in readiness for patients, who began to arrive within a few hours after the offensive began. Most of those received during the first few days had been wounded from 24 to 72 hours previously. Transportation was very limited, and considerable difficulty was experienced in obtaining rations, fuel, medical, and other supplies. A portable French laundry was here added to the equipment, but it proved inadequate. The hospital moved to Fromereville on October 29, where it was shelled November 2 by 8-inch guns, 12 missiles falling in its area and causing 12 casualties among the hospital personnel.

Patients were removed to a distance from the establishment and then evacuated, and all nurses were also transferred to the rear.

During this operation the hospital received 4,543 patients from 11 divisions, performed 2,448 operations, and had 176 deaths. From the 11th to the 25th of November it received 838 other patients, with 2 deaths. While at Fromereville the strength of the command was 48 officers, 54 nurses, and 254 enlisted men—an increase of 70 of all grades over that which it had when stationed at Fontaine de Routon.

EVACUATION HOSPITAL NO. 5⁴

After completion of its duty with the 32d Division at Villers-Cotterets, Evacuation Hospital No. 5 proceeded to Souilly and thence to Ville-sur-Cousances, Meuse, where it arrived September 16. Here the unit was held in reserve, some of its personnel assisting other hospitals in the vicinity during emergencies. It left, on October 3, for La Veuve, Marne, for service of the American divisions (2 and 36) assigned to the French Fourth Army in the Champagne sector to the west of the Argonne Forest. During its total period of activity it handled 15,195 patients, classified as follows: Surgical, 8,050; medical, 5,470; gas, 1,706.

EVACUATION HOSPITAL NO. 6⁴

At Souilly, Evacuation Hospitals No. 6 and No. 7 had been established prior to the St. Mihiel operation in a French hospital building, which was transferred with practically all its equipment except instruments. In addition to its official equipment there was a large quantity of material supplied by a French patroness, who had assisted in this manner a number of other hospitals in the Marne area. She remained at the hospital during the greater part of American service there and was of great assistance in many ways. The part of this large plant utilized by Evacuation Hospital No. 6 had a capacity of 1,000 beds, but later, after the Meuse-Argonne operation was well under way, this was expanded by the use of tentage, the capacity of the unit then increasing to 1,200 beds, while that of Evacuation Hospital No. 7 was even greater. In addition these units operated an evacuation area where accommodations were provided for 600 patients from Evacuation Hospitals Nos. 4, 5, and 8, Mobile Hospitals No. 1 and No. 5, the Gas Hospital at Rambluzin, and the neurological and contagious hospitals. Patients accommodated in this area were those awaiting the arrival of hospital trains, for none of the units mentioned was located on a railway. Such an area was further necessitated by the fact that there was no replacement camp among the armies to which these patients could have been sent.

Most of the cases sent to Evacuation Hospital No. 6 came from the Third Corps, but many were also received from other sources, such as the French Seventeenth Corps, to which American troops had been attached. It had been planned that this hospital should receive the slightly wounded only, but in point of fact, it received wounded of all degrees of severity, and medical cases as well.

One of the greatest difficulties encountered was provision of facilities for caring for the slightly wounded and sick. Cases which would have been ready for duty within a few days had to be evacuated in order to make room for others, thus necessitating a greatly increased use of hospital trains. Though from three to six trains daily were dispatched from Souilly, Evacuation Hospitals No. 6 and No. 7 and their evacuation area were constantly crowded, the number of patients at one time being over 3,800.

About November 3 Evacuation Hospital No. 6 took over the entire formation, and three days later Evacuation Hospital No. 7 moved to St. Juvin, in the vicinity of Grandre. The capacity of the entire establishment was then reduced to 1,800 beds, nearly all of which were constantly occupied, 1,400 cases being admitted on November 11. Thereafter, the work was almost entirely medical until the unit closed on December 8 and packed to move into Germany. (For a discussion of the organization of this unit see Chapter XVIII.)

During the period September 12 to December 8, while Evacuation Hospital No. 6 was stationed at Souilly 68 per cent of its cases were medical. As the capacity of the unit was expanded, wards were set aside for contagious cases and those with bronchopneumonia, for a general order had been received directing that no patients with fever be evacuated. Causes of admission included diarrhea (in diminishing numbers), typhoid fever (occasional and mild), diphtheria, meningitis (sporadic), and influenza, frequently complicated by bronchopneumonia, which gave a mortality of 42 per cent.

Patients were classified in three categories—sick, seriously wounded, and slightly wounded. All patients who, on admission, had fever or quickened respiration were sent at once to the pneumonia ward without the usual bath, for the early physical signs of pneumonia in many cases were very obscure, and it was found preferable that each patient be given the benefit of any doubt. If the complication mentioned did not develop, the patient was then transferred to another ward. The clinical course of bronchopneumonia varied widely, and treatment was almost entirely symptomatic.

Seriously wounded were undressed, bathed, prepared for operation, and X rayed, but the slightly wounded were merely undressed and the wounded area X rayed and prepared for operation. Cases requiring only a dressing were cared for in the dressing room, through which slightly wounded passed, excepting cases of shock, which were sent immediately to the shock ward, where a shock team was on duty at all times. No surgical cases were sent to a ward until after operation or dressing. For the seriously wounded two operating rooms were provided, and one for the slightly wounded. Each of the former had three tables at which two teams worked. The slightly wounded were treated by two of the most skillful teams available, who utilized four tables. Rapid anesthesia was practiced by employing ether according to the Rausch method or in combination with chloroform, or ethyl chloride was utilized.

The orthopedic service was considerably developed while this hospital was at Souilly, for under the general supervision of the surgical service this service

was made responsible for the splinting of all fractures and other cases that required mechanical support and the preparation of such patients for transportation. A ward was set aside for these cases, and to this two splint teams were assigned, each consisting of 1 officer and 2 enlisted men. From September 1 to December 10 the splints utilized were as follows: Thomas leg splint with traction, 222; Cabot posterior splint, 246; Jones traction splint, 15; hinged modification of Thomas arm splint, 180; Jones "cock-up" or "crab" splint, 16; Hodge, 5; long Liston, 4; wire ladder, 618; wood, 150; plaster of Paris jackets, 2. Wire ladder material was used for posterior angular splints of the arm, forearm, wrist, hand, ankle, and foot, when traction was not required.

The average number of patients operated daily was about 175. Schedules for all teams were such that they allowed each team a full night's sleep every other night.

From September 1 to December 8 this hospital performed 7,124 operations, of which 6,951 were performed between September 12 and November 12. This was exclusive of dressings, which were not counted. Surgical deaths from September 1 to December 8 numbered 211.

In the eye, ear, nose, and throat clinic 480 important cases were treated while the unit was stationed at Souilly. The total number of cases treated in this clinic was 5,303. The X-ray department at Souilly examined 8,535 cases, during rush periods averaging 600 cases in 24 hours.

Admissions during the Meuse-Argonne operation were as follows: Total, 22,174, including 14,095 sick, 324 gassed, 7,755 wounded. Operations numbered 6,591, deaths 204. In addition, before and after this operation this unit here admitted 11,038 cases. It also served as a collecting point for Evacuation Hospitals, Nos. 4, 8, 15, and Mobile Hospital No. 1.

EVACUATION HOSPITAL NO. 7⁴

In conjunction with Evacuation Hospital No. 6, Evacuation Hospital No. 7 operated at Souilly during the St. Mihiel and the Meuse-Argonne operations, but its history furnished no detailed information concerning its organization or methods during those actions separately. The unit moved to St. Juvin on November 6 where it remained until after the armistice.

During the Meuse-Argonne operation, total admissions numbered 18,791, of whom 6,375 were wounded, 12,374 were sick, and 42 gassed. Operations totaled 1,991 and deaths 302. During its operations in France, this unit received a grand total of 50,252 patients, including 18,380 admitted because of gunshot wounds.

EVACUATION HOSPITAL NO. 8⁴

Arriving at Petit Maujouy on August 26, Evacuation Hospital No. 8 established 1,000 beds in Adrian barracks and tents on the hillside sloping toward the north. Here it received seriously wounded and some other cases during the St. Mihiel and Meuse-Argonne operations.

In order to make available for professional work as many officers as possible, the administrative functions of the hospital were centered in the

commanding officer, adjutant and registrar, and the quartermaster. The last mentioned also performed the duties of supply officer, disbursing officer, summary court, and was in charge of the effects of deceased patients, of salvage, and of the Graves Registration Service. Medical supplies were obtained from medical dumps and from the Red Cross, and commissary supplies from the railhead and from the American Red Cross warehouses. Owing to inability to purchase an adequate supply of subsistence stores through a sales commissary, the greater portion of the subsistence supplies were procured on ration returns. Two kitchens were operated. The officers on day and night duty in charge of the admission of patients collected and receipted for all valuables. As this unit received very few medical cases, the chief of the medical service was placed in charge of evacuations and also acted as official censor of the organization. The adjutant and registrar had charge of all hospital records and correspondence, and supervised the preparation of the reports of sick and wounded.

The receiving department was one of the most vital parts of the entire organization, as it was at this point that all the patients were admitted, examined, and appropriately distributed, records made, clothing removed and salvaged, and valuables collected. It occupied the largest structure conveniently available. Teams organized from the enlisted men of the hospital prepared patients at this point for operation before they entered the X-ray department. These teams served in rotation throughout the 24 hours in order to prevent delay in the surgical service. The work here was all carried on under the direction of day and night triage officers, whose duty it was to examine all wounds, select the cases that required attention first, and see that every patient requiring X-ray examination was provided with a distinctive slip which insured his being taken to the radiologic department before he entered the operating room. The triage also had charge of the enlisted personnel and was responsible that each team did the work required of it. A noncommissioned officer and eight litter bearers were stationed at the entrance ready to unload the ambulances as they arrived. Conveniently accessible and ready for distribution were piles of litters, blankets, hot-water bottles, and splints, which could be put in the ambulances and sent back to the front in exchange for such articles as they had brought in with patients. After removal from the ambulances, patients were carried to one of the receiving tents to await their turn to be sent to the record and preparation room. If their condition was such as to require it, they were allowed to remain on the litters. Two other litter-bearer squads, working under the control of the triage officer, then carried the patients into that portion of the receiving department where the necessary records were made on the two or more typewriters utilized for this purpose. The required entries were made on the patient's field card; but in case a patient had none, one of these cards was started at this point. For the convenience of the hospital, and in order to provide a directory which could be used as an alphabetical index to all patients admitted, Medical Department Form No. 52 was made out in duplicate down to and including the diagnosis, the duplicate placed in the patient's

field envelope with his other papers, and sent with him to the ward. The original of this form was put into the file and became part of an index to patients in the hospital. This arrangement was found to be of great value, as numerous telegraphic requests were constantly being received from the central records office relative to the character of the injuries received by specified officers and men and the points to which they had been evacuated after treatment. This latter information was entered on each patient's card as soon as he was evacuated from the hospital.

All slightly wounded patients were directed by the triage officer to be carried to the section provided for care of patients of this character; if seriously wounded they were sent to the undressing and preparation room, which occupied a section of the receiving department. At this point the patient was cared for by a team composed of two orderlies; one of the orderlies removing or cutting away his clothing, while the other collected his valuables and made out duplicate receipts for them. These receipts were signed and the original went with the patient in his field envelope. A suit of pajamas was given him, and he was then moved on his litter to a rack which raised him about 3 feet above the ground, and which permitted another attendant to give him treatment preparatory to operation. The parts adjacent to the wounds were shaved and a small sterile binder was applied. It was found impracticable to bathe the severely wounded men, many of whom were suffering from multiple wounds and could not stand the amount of manipulation involved. Four of the teams mentioned worked side by side simultaneously on day and night shifts in charge of a noncommissioned officer, removing clothing, collecting valuables, and preparing wounds for operation.

The patient was then carried to the X-ray room. The triage officer gave each patient requiring X-ray investigation a special green slip, with entries thereon of the wounds requiring examination. This proved to be of great advantage and facilitated the work. Two specially designated litter-bearer squads moved each patient having one of these slips in his envelope to the X-ray room as soon as he could be admitted for examination. An attendant wrote on the slip the findings dictated by the officer making the examination, and returned it to the field envelope, which went with the patient to the operating room. Indelible markings were made on the skin of the patients by using silver nitrate, wherever foreign bodies were seen under the X ray, and an accurate description of the size and shape was noted on the green slip above mentioned.

The chief of the surgical service selected the personnel of the operating teams which were organized from the hospital staff, and designated the type of cases each team was to treat. He also assigned the nurses and orderlies in the operating room, determined the tours of duty there, formulated regulations governing treatment of certain wounds, and was the hospital consultant in his specialty. An assistant alternated with him. Operators continued care of their cases after these had been sent to the wards, thus reducing the number of ward surgeons. The most satisfactory arrangement for tours of duty was from 8 to 8, being in fact, however, slightly less than a 12-hour

shift, as half an hour at the end of each period was devoted to cleaning and replenishing the operating room. At one time the hospital had over 700 severely wounded patients, who required such an amount of care that the operating-room force had to be reorganized in order that nurses might be released for duty in the wards. When possible each team used three tables, one patient being anesthetized or splinted while two were being operated. With 12 operating teams this hospital ordinarily was able to perform the work required, by continuous day and night shifts.

The operating was performed in an Adrian barrack in which 18 operating tables were set up, half of the building, running lengthwise, being the "sterile" portion for dressings, instruments, etc., and the other half being "nonsterile." Patients were brought in on litters from one end of the structure through the "nonsterile" portion. After litter bearers had received the necessary instructions from the chief of the surgical service they carried the patient to the table indicated. At the middle of the building, on the sterile side, an opening was cut through, and a large storage tent was put up at right angles to the opening and adjoining the building. In this tent all instruments were cleaned and sterilized by men especially trained for this work. The "nonsterile" nurse from each group of teams carried the instruments to and from this tent. All surgical dressings and gloves were sterilized and stored in a structure immediately adjoining the operating room, where they were under the charge of a day or a night nurse, whose duty it was to see that each team was furnished with an adequate supply at all times. Eight litter bearers, with a sergeant, first class, in charge, were detailed to move the patients from the tables as soon as the operations were finished and transfer them to the wards, leaving the operating room by the door at the lower end. Litters thus moved through the operating room in one direction only and thereby saved much confusion. The noncommissioned officer kept a list of the vacant beds in all surgical wards and also a list of the wards designated for the reception of evacuable and nonevacuable cases, respectively. Certain wards were reserved for special cases, such as injuries of the head and spine, chest, abdomen, fractures, and joints. The operator indicated on the field card the type of case to be sent out, and the noncommissioned officer directed the litter bearers where the patient should be carried. The portion of the hospital area devoted to the evacuable cases was made easily accessible to the ambulances by constructing roads in such a manner that patients could easily be evacuated without interfering with the ambulances which were carrying patients to the receiving department. Many patients were admitted who were unable to undergo operative treatment immediately, and these the triage officer sent to the shock wards. These consisted of two large Dickson tents where patients came under the care of the shock team, made up of 1 medical officer, 2 nurses, and 2 orderlies. These cases were held under treatment until their condition improved sufficiently to enable them to withstand the shock of operative procedures.

A space apart from the general operating room was provided for the treatment and dressing of the slightly wounded patients and those able to walk. It was not always easy to determine whether such cases should be

sent to this department or to the general operating room, for it frequently happened that wounds which on the surface appeared to be trivial proved in reality to be extensive and oftentimes serious. Proper classification of such cases required considerable experience on the part of the triage officer. All walking cases, however, were without exception cared for in the room for slightly wounded, for otherwise the operating room became badly crowded, resulting in confusion and lack of discipline.

The hospital was provided with its own electric lighting system. The calcium carbide apparatus furnished light for a few hours at a time, but habitually soon developed some defect so that it could not be used. The Delco system gave good results in a small way, but was entirely unfitted to bear the burden which was finally required of it. A lighting arrangement which proved to be satisfactory was the installation of four incandescent bulbs for each table, one attached to an extra long cord which permitted it to be used in any situation. Two dynamos which were set up by the engineers, and were maintained by them, gave satisfactory service both day and night. A regulation in force throughout the zone of advance required that all lights must be shut off from observation after dark, owing to the danger from hostile airplanes. As this required the entire hospital area to be kept in total darkness, tarred paper screens were used to prevent rays of light from emerging from the operating room, wards, or other tents or structures. This requirement caused considerable difficulty for at times patients were received continuously through the night and often had to be evacuated by night.

One of the important fields of activity was the evacuation service, for upon the success with which bed space was freed by patients who were able to be transferred depended in large measure the ability of the hospital properly to function. Every medical officer was impressed with his responsibilities in this matter, and urged to mark every case for evacuation as soon as his condition would permit. Cases leaving the operating room who would be fit for evacuation within a period of 12 hours were sent to the group of wards for evacuable cases; these wards were emptied each day. In the nonevacuable group of wards a careful check was made daily by the ward surgeon with a view to determining which cases were fit for evacuation; they were reported to the registrar's office. Necessary arrangements were then made at frequent intervals with the ambulance service to carry out the evacuation of these serious cases. The wards were notified at what hour the evacuation ambulances were expected to begin removals, a distinctive marker was placed on the bed of each evacuable to indicate to the litter bearers that he had been selected for transfer. Numerous blankets were provided, one or two being placed folded double on the litter, and one or two over the patient. The successful administration of the hospital was dependent largely upon the promptness with which patients ready for evacuation were removed.

Admissions to this hospital during the Meuse-Argonne operation were 4,340 wounded, 135 sick, 261 gassed; total, 4,736. Operations numbered 6,134; deaths, 338. The total number of wounds among those admitted during that period was 6,204, and the total cases of gas gangrene were 288. The total number of surgical admissions to the hospital during its service was 6,922.

EVACUATION HOSPITAL NO. 9⁴

Evacuation Hospital No. 9 was stationed at Vaubecourt, Meuse, from August 29 to December 12. Its receiving ward during the Meuse-Argonne operation was staffed by 2 commissioned officers, 1 sergeant, 8 clerks, 2 guards, and 10 litter bearers. Though patients were received at all hours, the most active period of this department was from 1 p. m. to 7 p. m.

With the arrival of troops in the Meuse-Argonne area, this hospital became progressively more and more active, receiving a number of medical cases before the offensive began. Attempts were made properly to segregate infectious cases into different tents, but after the influenza epidemic began this was not wholly practicable. The medical section of the hospital provided 1,300 beds, but these sometimes proved inadequate in number and patients were then placed on litters. A section with 360 beds was provided for those ill with influenza or mild respiratory disease. The activity of this section was evidenced by the fact that during one period of 24 hours it received and evacuated 824 cases. Another section of 162 beds received the serious medical cases, half its beds being reserved for influenza and pneumonia patients and half for other infectious cases. In general, medical cases were distributed according to the following classification: Pneumonia, other respiratory diseases including influenza, noncontagious cases and diarrheal diseases, miscellaneous contagious cases, and gassed patients.

The following table shows the number of admissions for the various groups of diseases, by months:

	Septem- ber	October	Novem- ber	Decem- ber	Total
Respiratory diseases, including influenza, but not pneumonia.....	2,517	7,018	2,733	23	12,291
Diarrheal diseases.....	348	3,953	2,309	11	6,621
Pneumonia.....	63	373	91		527
Contagious diseases.....	83	246	110		439
Gassed.....	40	186	19		245
Others (about).....	500	1,500	600		2,600
Total.....	3,551	13,276	5,862	34	22,723

Many gassed cases (not included in the above figures) passed through without being admitted to the gas ward, for some required operation for wounds and others were lightly gassed. Practically all gassed patients had been incapacitated by mustard gas, causing burns, conjunctivitis, laryngitis, gastroenteritis, and bronchitis.

Surgical cases were distributed as follows: In the receiving ward where surgical and medical cases were sorted, the former were classified as for 1, immediate operation; 2, operation after X-ray examination; 3, dressing, or 4, doubtful cases for X-ray examination. These last were sent to the operating room if the X ray showed a foreign body, but were returned to the dressing room if it did not.

Routine methods were quickly evolved to promote this classification and consequent distribution. Six litters supported by trestles received recumbent cases, ambulant patients occupying benches in the receiving ward proper, while

an annex with 38 beds received an overflow. Clothes were removed, wounds inspected, and if the patient was to go direct to the operating room, he was entirely undressed, the wound area was shaved and drained, and a light dressing was applied. Similar preparations were made if he was routed to the operating room via the X-ray laboratory. Simple wounds not requiring débridement were taken to the adjoining dressing room and thence to their wards. As in other hospitals of this class, a shock ward received patients in need of such treatment. In the operating room 2 tables were provided for each team, and the total 12 tables utilized was served by a splint team. Two of these teams were provided alternating in 12-hour shifts. Instruments were sterilized in quantity, laid on a large sterile table, whence they were issued to all teams. On most active days, the average number of patients operated in 24 hours was slightly over 200. Patients were evacuated in from 24 to 36 hours, except a few suffering from shock, wounds of the head, thorax, or abdomen, or in danger of hemorrhage or gas infection. These were sometimes held as long as 10 days.

During the Meuse-Argonne operation this unit admitted 33,910 patients, of whom 23,582 were sick, 9,809 wounded, and 519 gassed. Operations numbered 3,437 and deaths 259. The number of patients received by this unit in France totaled 36,322. Total admissions to the surgical service were 13,765, of whom 10,200 were dressed without operation and the remainder operated. Gas bacillus infections numbered 57, of whom 2 died without operation and 5 after it. Most of the wounded had received injuries of the extremities, there being 2,094 admissions for wounds of the upper extremities and 1,449 for those of the lower. In 1,931 cases, fragments of high-explosive foreign bodies were discovered, of which number 1,496 were removed. In 287 cases, machine-gun or rifle bullets were lodged and in but 5 cases shrapnel bullets. In 1,131 wounds examined no foreign body was found, more of these wounds having been caused by machine-gun or rifle bullets. In one patient 13 machine-gun bullets were located.

The time elapsing between injury and operation was less than 6 hours in 2.5 per cent of the cases, from 6 to 12 in 18.5 per cent, from 12 to 18 in 27.5 per cent, from 18 to 24 in 26.5 per cent, from 24 to 30 in 10 per cent, from 30 to 36 in 6 per cent, and over 36 hours in 9 per cent.

The conditions of most patients on arrival was good, only 11 being shocked and 33 being gassed. The number of cases débrided was 3,265. Of these, 2,903 received a general anesthesia, while for the others local anesthesia was employed.

Orthopedic activities were closely associated with general surgery and consisted chiefly in the temporary splinting of fractured or severely wounded extremities for immobilization during evacuation. Three hundred and ninety-seven splints were applied.

The laboratory performed indispensable service in the performance of its technical examinations.

The eye, ear, nose, and throat service cared for a large number of patients both in its clinic and throughout the wards.

The X-ray department performed 4,804 examinations while this unit was at Vaubecourt. The dental department treated 630 patients, including 32 cases of gunshot wound of the jaws.

The evacuation area consisted of a large Bessonneau hangar and 18 smaller tents where litter cases were collected shortly before a train was due and ambulant cases immediately after it arrived. As a rule from 6 to 8 hours' notice was given before the arrival of a train. The largest number evacuated in 24 hours was 2,128 and the largest number on any train 787, all of the latter members being sitting patients. The average number evacuated on American trains was 480 and on French trains 270, about 90 per cent of all patients being placed on board at night.

Throughout its service in France, this unit received assistance from the Red Cross, which supplied it with large quantities of bandages, cotton, sponges, medicines, surgical instruments, blankets, pajamas, and other necessities and maintained a canteen department which served hot cocoa, sandwiches, cigarettes, and chewing gum to all arrivals. Its personnel also prepared the special diets, some of the material for which was furnished also by the Red Cross.

EVACUATION HOSPITAL NO. 10⁴

Evacuation Hospital No. 10, on September 21, took over from the French barracks at Froidos equipped with a quantity of supplies. After September 26, when the first patients were admitted, the operating rooms were constantly in service. The total number of surgical cases received from September 27 to November 15, inclusive, was 5,419. Total cases operated were 3,343; total cases evacuated without operation, 2,056; total patients dead on arrival, 10; total died after operation, 112; total died without operation, 109. A very large proportion of the patients admitted to this hospital were seriously wounded, and because of delay in getting them to hospital many cases were complicated with gas infection. For the same reason there was a large mortality from abdominal wounds. Of the patients operated, 2,476 had single wounds and 865 multiple wounds. The X-ray department examined 3,037 cases before the end of December, 1918, fluoroscopic examinations for battle injuries numbering 2,934. The contagious disease section of the hospital occupied buildings previously used by the French for the same purpose. These were 24 in number, most of which were of barrack construction and of which 13 were used as wards, the others being used for miscellaneous staff purposes and as quarters. Over 3,000 medical cases were admitted during the operation, the most common ailments being, in the order mentioned, mumps, influenza, diarrhea, toxic gassing, acute bronchitis, and rheumatic fever. Laboratory examinations from September 12 to January 1, 1919, numbered 1,853.

EVACUATION HOSPITAL NO. 11⁴

After reinforcing Mobile Hospital No. 39, at Aulnois, and Field Hospital 41, for 10 days during and after the St. Mihiel operation Evacuation Hospital No. 11 located, September 21, about 1 mile north of Brizeau. This

location was well toward the front, but suffered from the great disadvantage of not being on a railway. This situation required that supplies be brought in by truck and that patients be evacuated by ambulance from 11 to 15 km. (6.6 to 9 miles) to Evacuation Hospital No. 10, at Froidos; to American Red Cross Hospital No. 114, at Fleury sur Aire; to American Red Cross Hospital No. 110, at Viller Daucourt; or to Evacuation Hospital No. 9, at Vaubecourt. The capacity of the unit was 460 beds, but two annexes of 200 beds each were established, one on October 5, at Camp Raton, 1.2 km. (0.75 mile) distant, for influenza, pneumonia, and other cases of infectious diseases; the other, opened October 27, at Brizeaux Village, 1.6 km. (1 mile) distant, received only mumps cases. The hospital proper was ordered to receive only seriously wounded cases, but toward the end of the Meuse-Argonne operation some slightly wounded were admitted and after the armistice became effective, medical cases. While at this site the hospital with its annexes received 2,273 medical cases and 3,292 surgical cases. Of the latter, 2,792 were serious and among them 216 deaths occurred. The largest number of seriously wounded operated in one day was 195. In order to expedite care of patients still carrying tourniquets or suffering from shock, abdominal wounds, aspirating chest wounds, or hemorrhage, an "emergency tag" was used carrying the following notations: Name; urgency, 1, 2, 3; preoperative ward; X ray; evacuation ward; shock ward. In filling out this card the triage officer circled the number, 1, 2, or 3, according to circumstances, a circle around the figure "1" signifying "rush," and made appropriate check opposite the other entries.

The personnel on duty in the receiving and sorting section of the hospital consisted of 6 officers and 58 enlisted men, divided into two shifts. The greatest number of admissions in one day was 224, all of whom were seriously wounded. After operation, abdominal cases were held 10 days, head cases, in the event the dura had not been opened, were evacuated at the discretion of the operator, but those in which the brain was involved were held at least 7 days. Hemothorax complicating chest cases with a through and through injury were operated in 48 hours and evacuated as soon as it was shown that the hemothorax was not likely to recur. If a foreign body remained in the thoracic cavity no attempt was made to remove it. No localized abscess developed up to the time of evacuation, and there were but two cases of infected hemothorax in 35 cases. Compound fractures, including those of joints, were held from 3 to 7 days, but simple fractures were evacuated at once. All amputations were held from 7 to 10 days and then evacuated as ordered by the chief of service. Spinal cases were at first held 7 days, but when it was learned that they were prone to develop bed sores and fatal spinal meningitis, they were evacuated as quickly as possible on well-padded litters. Cases infected with gas-forming bacilli were segregated, but it was never possible to give them a ward by themselves. The shock ward treated 240 patients, of whom 54 died. Stimulants used in this ward in order of their frequency were camphorated oil, caffeine, adrenalin, digitaline, strychnine, and whisky. Normal salt solution proved more satisfactory than gum acacia solution for intravenous injections. The hours of operating teams were at first 8 hours, but were later changed to 12, which proved more satisfactory. Teams were

then required to dress their own cases. The two splint teams, which alternated in service, found the Thomas leg splint and the Murray modification of the Thomas arm splint to be the most suitable for outgoing patients, employing 126 of the former and 122 of the latter. Other splints applied were Cabot, 166; Liston, 10; Jones, 8; wire ladder, 85; and wood support splints, 90. Splinting was required in 6 of the 13 cases of maxillofacial injuries. The number of fluoroscopic examinations made was 3,143.

During the Meuse-Argonne operation, Evacuation Hospital No. 11 admitted 3,654 patients, of whom 265 were sick, 4 gassed, 3,365 wounded. Operations numbered 3,364 and deaths 208. The annex at Brizeaux received during this operation 469 patients and that at Camp Raton 366; of the latter, 25 died.

EVACUATION HOSPITAL NO. 14⁴

On September 21 Evacuation Hospital No. 14 arrived at Villers-Daucourt from Toul, transporting its equipment on 90 trucks and the officers and men in the vehicles of Evacuation Ambulance Company No. 12. At this point the unit prepared to take over part of a French evacuation hospital, but orders to that effect were countermanded, and until October 11 a detachment of 102 of its enlisted men assisted Army Red Cross No. 110, at that station. On October 6 it moved to Les Islettes, reaching its destination the next day. Here from October 11 to November 6 it received seriously wounded only, operating entirely under canvas, except that the office, laboratory, the field officers, and nurses were quartered in a neighboring château. This location was very satisfactory, except that there was only a one-way road into the premises and that it was at some distance from railhead.

The operating room consisted of a Dickson tent containing 10 improvised wooden tables whereon the litters carrying patients were placed—an expedient found more satisfactory than the use of metal tables, to which patients were lifted from their litters. Electric light for the unit was furnished by its own dynamo. Evacuations were made by Evacuation Ambulance Company No. 6, usually to Villers-Daucourt, some 24 km. (15 miles) distant. As practically all cases thus transferred were postoperative litter cases, and as 75 per cent of them were evacuated at night, this removal was an arduous and difficult task.

On November 6 the hospital moved to Varennes, where its site was a low muddy flat, pitted by shell craters which had to be filled in; the approach was over a very difficult road quite unsuitable for ambulance transport.

These disadvantages were partially offset by proximity to a railway siding, though patients had to be carried to this by litter through very deep mud. At this location the hospital received all classes of patients, until several days after the armistice, after which its admissions were chiefly medical.

Admissions numbered 1,757 at Les Islettes and 1,045 at Varennes (before the armistice became effective). Total operations were 1,425. There were 71 preoperative and 58 postoperative deaths among surgical patients. Seventy-five cases of gas gangrene developed, necessitating 23 amputations.

At no time did the hospital have enough transportation to haul supplies, usually only one truck being available for all service of this character, after the hospital had reached its location.

EVACUATION HOSPITAL NO. 15⁴

Evacuation Hospital No. 15, organized at Fort Riley, Kans., March 21, 1918, arrived in France September 3, 1918. On September 21 it reached Revigny, where it took over a French hospital, which it operated in conjunction with Base Hospital No. 83 until October 12, when it left for Glorieux. Service at Revigny was not very active, and many officers belonging to this unit were sent out on temporary duty to various other evacuation hospitals.

During its entire period of active service, this hospital admitted 4,761 medical and 4,214 surgical cases.

EVACUATION HOSPITAL NO. 16⁴

After arriving in France September 7, 1918, Evacuation Hospital No. 16 remained at Pontanezen, near Brest, until September 18, when it moved to Le Mans, then to Bazailles-sur-Meuse and, on October 12, to Revigny, where it took over the management of a hospital and 495 patients from Base Hospital No. 83. It operated this hospital until November 13, when it returned its management to Base Hospital No. 83, and reinforced same until January, when it closed.

In the interval October 15 to November 13 the unit admitted 2,840 patients, of whom 508 were returned to duty and 2,197 evacuated, while 80 died and 8 went absent without leave. The surgical admissions, operative and nonoperative, totaled 132. Medical admissions included 1,140 cases of influenza, 99 cases of lobar pneumonia, and 69 cases of bronchopneumonia. The dental work consisted of 548 sittings and treatment of 11 cases of fracture of the jaw. Examinations made by the X-ray laboratory totaled 365 (of which 70 per cent were fluoroscopic chest examinations), and those by the pathological laboratory 686.

EVACUATION HOSPITAL NO. 20⁴

After landing at Brest, September 8, Evacuation Hospital No. 20 moved successively to Le Mans, Bazailles-sur-Meuse, and Souilly, where the hospital in effect was broken up, its personnel being distributed among other units until November 18.

EVACUATION HOSPITAL NO. 21⁴

After the arrival of Evacuation Hospital No. 21 at Rimaucourt, on September 20, 1918, many members of its personnel were assigned to duty with other units, until the hospital moved to Villers-Daucourt, October 14, when it was attached to American Red Cross Military Hospital No. 110. This was a small unit consisting of but 3 officers and 2 nurses and 2 enlisted men, while the personnel of Evacuation Hospital No. 21 then consisted of 30

officers and 226 enlisted men. On October 14, however, half of its commissioned personnel was assigned, by orders of headquarters, First Army, to duty with American Red Cross Military Hospital No. 114, at Fleury, with which they remained until November 30. Forty-two enlisted men were assigned to Evacuation Hospital No. 9, at Vaubecourt, and 1 officer and 15 men to the gas-treatment annex of Evacuation Hospital No. 10, at Julvecourt. Three officers and 18 enlisted men, between November 4 and 15, relieved Field Hospital No. 41, operating the gas-treatment annex of American Red Cross Military Hospital No. 110, at Villers-Daucourt. From November 4 to 15 one officer and three enlisted men operated the gas-treatment annex of Evacuation Hospital No. 6, at Rambluzin, and one officer was assigned to the train regulating office. Two surgical teams operated continuously at American Red Cross Military Hospital No. 110.

Ambulance Company No. 120 was assigned to duty with Evacuation Hospital No. 21.

Four operating rooms were provided at Villers-Daucourt, the three largest having three tables each. One of these rooms was used for minor cases and as a preoperative ward, whence patients were taken to the shock ward or to the X-ray examination room. During all his successive moves through the hospital, except when placed in bed, a patient remained on the litter which had brought him in, apparently a minor detail, but in emergencies of considerable importance. On November 1, 985 patients were admitted in 12 hours, and 2 hospital trains were loaded in 8 hours. When teams operated in 12-hour shifts, the best results were secured if 2 teams utilized 3 tables, but when the shift was 8 hours, 1 team using 3 tables proved as effective as did 2 teams using the tables in conjunction, for the former arrangement prevented confusion. Patients were evacuated as soon as they could endure transportation, usually in from 12 hours to 3 days. The last patient was evacuated on November 15, when the gas-treatment hospital, which had a capacity of 275 beds, was closed. In addition to caring for its own cases, Evacuation Hospital No. 21 received for train transfer all patients from Evacuation Hospital No. 14, at Les Islettes.

EVACUATION HOSPITAL NO. 22⁴

After reaching Brest, September 12, 1918, Evacuation Hospital No. 22 was sent to the hospital center at Allerey on September 20, but on October 3, entrained for Souilly, arriving there October 6, where the unit was broken up and its personnel assigned to 11 other hospitals in the zone of the army. On November 19 the unit was reassembled at Vaubecourt, and moved the next day to the Medical Department concentration area around Joinville.

EVACUATION HOSPITAL NO. 23⁴

Arriving in France September 16, 1918, Evacuation Hospital No. 23 moved first to Beaune and thence to Souilly, where it arrived October 10.

Here the unit was broken up and its personnel distributed among 12 other army hospitals, where they served until the unit was reassembled at Souilly on November 20 for movement to the Joinville area.

NEUROLOGICAL HOSPITAL NO. 1⁴

On September 2, 5 officers and 15 men were sent from Base Hospital No. 117, at La Fauche—the neurological center—to Benoite Vaux for temporary duty in the neurological hospital there, whose staff was to number 15 medical officers. Plans at this time contemplated that Base Hospital No. 117 be expanded to 1,000 beds, and the neurological hospital at Benoite Vaux to 500 beds, that 10 field hospitals provide 300 beds for neurological cases, and that Base Hospital No. 45, at Toul, provide 500 beds for cases of this character. Temporary overflow accommodations at Rimaucourt were to provide 500 beds, thus giving a total of 2,800 for neurological cases. Shortly thereafter authority was also given to expand the hospital at La Fauche to 2,000 beds; 2 officers were sent to Base hospital No. 45 for temporary duty in its neurological wards and 7 were sent for distribution to tactical divisions.

AMERICAN RED CROSS MILITARY HOSPITAL NO. 110⁴

From September 25 to November 20 this unit operated as an evacuation hospital at Villers-Daucourt, though it was not so designated. It was directed to receive seriously wounded and gassed cases only, and its personnel was drawn both from the Army and, to a small degree, from the Red Cross. This unit admitted a total of 10,679 patients, not including 2,978 from other hospitals in the evacuation area. Shock cases to the number of 470 were sent to the shock wards before operation, except when intervention was necessary to check hemorrhage. When the patient's condition permitted, as indicated by the blood pressure, he was sent to the X-ray department and thence to the operating room. The total number of operations performed was 4,575. Of the 3,088 cases admitted to the operating room, 138 were suffering from gas gangrene and 242 were received in shock. The average number of hours between injury and admission to the operating room was 24 hours, the shortest period being 1 hour and the longest period 4½ days. Total deaths in the hospital numbered 194. Total foreign bodies removed were 1,277. The percentage operated was 37.4, the percentage of deaths from all causes being 1.8. Of these, 14.6 per cent were preoperative in the shock ward. The percentage of surgical to other cases was 78.5. Shock-ward statistics were as follows: Total admissions, 470; preoperative admissions, 242; preoperative deaths, 28; postoperative admissions, 228; postoperative deaths, 53; total deaths, 81. Normal saline transfusions, 80; gum-acacia-saline transfusions, 42; glucose (3 per cent) transfusions, 6; citrate of blood transfusions, 80. Deaths after blood transfusions numbered 26. Total admissions by this hospital during its service in this and other areas numbered 18,867.

This unit was assisted by personnel from Ambulance Company No. 120, Field Hospital No. 41, Evacuation Hospital No. 14, Mobile Hospital No. 4,

Ambulance Company No. 310, United States Army Ambulance Service Section No. 610, Evacuation Hospitals Nos. 21, 22, and 23, and by numerous surgical teams. It was also supplied with individual officers and nurses from Army and Red Cross personnel.

The summarized report of this unit from the four months ending November 10 was as follows:

Hospital days	23, 179
Patients admitted	17, 446
Patients evacuated	13, 674
Patients died	255
Patients returned to duty	9
Total beds	525
Maximum expansion	781

AMERICAN RED CROSS MILITARY HOSPITAL NO. 114*

After arriving at Fleury, this Red Cross unit was known as American Red Cross Military Hospital No. 114, and eventually was taken over entirely by the Medical Department, United States Army. Certain Red Cross nursing personnel continued with the formation until it closed. On November 1 this unit became Evacuation Hospital No. 114.

Until reinforced October 15, by 15 officers from Evacuation Hospital No. 21, the commissioned personnel of this unit consisted of 5 officers, supplemented by teams temporarily assigned. The officers from Evacuation Hospital No. 21 were now assigned to administrative and ward services and to other duties not performed by attached teams. Service was handicapped by the limited number of nurses.

Routine service was as follows: Patients in shock were taken at once to the adjoining shock ward, the slightly injured and walking cases to the receiving ward for patients of that class, whence they were sent to the evacuation ward, where they remained from 12 to 24 hours. The number of patients in this category, who were evacuated without operation, depended directly upon the number of serious cases requiring such attention that could be cared for in 24 hours. As a rule, the most serious cases were selected for operation. These and all litter cases (many of whom had arrived in bad condition as ambulant patients) passed through the receiving ward for patients of this class, which was on the opposite side of the general receiving ward from that to which the slighter cases were sent. All litter and serious cases were completely undressed and bathed, all dressings renewed except the larger splints, wounds inspected, re-dressed, and re-splinted, or splints were readjusted. Clothed in pajamas, patients were taken to the X-ray department, whence, after fluoroscopic examination, they were taken to the operating room. This was equipped with from 15 to 20 tables arranged in 2 rows, 1 or 2 being assigned to each team. These teams consisted usually of an operator and his assistant, an anesthetist (a commissioned officer), a nurse, and an enlisted man. In general no specialized work was assigned to individual teams except for some cases of head injuries. Teams worked in 12-

hour shifts. Beside each operating table was a small table holding only a scalpel, pair of scissors, hemostatic forceps, anatomical forceps, a needle, and catgut. Other instruments and dressings were kept on a large table in the middle of the room in charge of a nurse, who distributed them on call. From the operating room, cases were carried to the postoperative ward, unless in need of treatment in the shock department. All cases reaching the wards bore tags marked "hold" or "evacuate," the former tag being affixed to the severe cases, which were held 24 hours or more. Head, thorax, and abdominal cases were held from 3 to 10 days, according to the pressure for beds, but all others except these usually were evacuated in 36 hours. The ward surgeons redressed patients every 24 hours, or oftener if dressings became soiled, and verified the application of splints.

As was to be expected, after the armistice the proportion of medical cases increased greatly, due chiefly to influenza, pneumonia, and dysentery. From September 26 to December 11 the total number of evacuations was 28,139, of whom 21,078 were surgical, not including 575 wounded prisoners and 6,477 medical cases. These patients were removed by 93 trains.

GAS HOSPITALS ⁴

Four gas-treatment hospitals were provided in the area of the First Army. On September 24, the officer charged with degassing service reported that the total number of officers assigned to these units, including teams, but not including 3 officers assigned for instruction, was 13, and the total of enlisted men was 231. None of the units were fully equipped and none had transportation. Gas Hospital No. 1, with 3 officers and 288 beds, was at Rambluzin; No. 2, with 6 officers and 300 beds, was at Julvecourt; No. 3, with 1 officer and 325 beds, was at La Morlette, and No. 4, with 3 officers and 350 beds, was at Rarecourt.

Gas Hospital No. 1 had reached Rambluzin August 29 and opened the next day. On October 5 its personnel consisted of 2 officers and 37 men. During October the number of gassed patients it admitted averaged 8 daily, but at the end of that month it was ordered to discontinue service as a gas hospital and to receive contagious cases.

Gas Hospital No. 2, at Julvecourt, with a bed capacity of 300, was caring for 475 patients on October 2. Thereafter its patients usually numbered less than 300, though occasionally they exceeded that figure. This unit was provided with excellent bathing facilities and a portable laundry. From November 5 to 25, when it closed, it was designated as Annex B of Evacuation Hospital No. 10, and operated under its general jurisdiction. During the Meuse-Argonne operation this unit admitted 4,267 patients, among whom were 37 deaths.

Gas Hospital No. 3, at La Morlette, was staffed by 1 officer and 19 enlisted men, but this number was augmented, for part of its service, by 2 officers and 40 men from Field Hospital 338.

Gas Hospital No. 4, at Rarecourt, was staffed by 3 officers and 47 enlisted men. From November 5 to November 17, when it closed, this unit was known as Annex A to Evacuation Hospital No. 10.

BASE HOSPITALS AT TOUL

On October 9 the hospitals at Toul were transferred from the First to the American Second Army, but they are discussed at this point as they were more active during the period of their service in the First Army, and during that time they cared for more battle casualties than they did later.

Like the other hospitals located at Toul, Base Hospitals No. 45 and No. 51 received casualties from the Meuse-Argonne operation, but because of their distance from the front, relatively few were admitted. Most of the surgical work which they performed consisted of secondary closures and care of postoperative cases.

BASE HOSPITAL NO. 51⁴

Base Hospital No. 51 had arrived at Toul and taken over French barracks. The unit received patients from the First Army and later in much smaller numbers from the Second Army.

Admissions during the last week of September totaled 812, and weekly admissions thereafter were as follows: October 8, 496; October 15, 851; October 22, 105; October 29, 534; November 5, 66; November 12, 252. Of this number, about 1,200 were surgical, 271 gassed, and the remainder medical.

After the installation of its X-ray plant, which had begun operations September 11, surgical work was limited for a time by lack of instruments. Nevertheless, the unit was able to care for from 50 to 150 cases daily and in emergencies for even larger numbers.

BASE HOSPITAL NO. 55⁴

This unit arrived at Toul September 28. On October 8 it had a normal capacity of 924 beds, with emergency expansion of 1,163. By the addition of tentage its bed capacity could be increased to approximately 2,000.

BASE HOSPITAL NO. 78⁴

On September 23 this unit arrived at Toul, where it became a part of the Justice hospital group, occupying 3 three-story and 3 two-story structures and about 10 smaller buildings.

The first patients were admitted September 29. During the months of September and October its activities were practically those of an exacuation hospital. It received some cases from evacuation hospitals and mobile hospitals, but most of its patients from divisional units. During the height of its activities this hospital functioned with less than 50 nurses on duty and only 150 enlisted men, exclusive of patients assigned to miscellaneous duties. The original equipment was not received until December, 1918. Patients were

carefully classified in the receiving ward and distributed to the appropriate departments of the hospital. Operating teams were made up of three medical officers, an operator, an assistant, and an anesthetist. The schedules of service were so arranged that not more than 12 hours continuous service was required of a team, night and day service alternating. Much of the operating was performed at night, for the convoys usually arrived after dark. A large number of preoperative cases were received a few hours after the injury had been sustained. Except the shock cases, which were cared for in their special ward, surgical cases were X rayed and promptly operated. Patients were handled as little as possible: most of the cases did not leave the stretcher upon which they arrived from the ambulance until they were put to bed after operation.

Extensive débridement was practiced, followed by the Carrel-Dakin method of wound treatment. Because of early evacuation of patients there was but little opportunity for secondary closures of wounds.

During the early part of its activities this hospital was the surgical unit of the group, but after the armistice it took over the treatment of infectious and suppurating cases and still later the treatment of genitourinary diseases.

From September 29, 1918, to April 29, 1919, it admitted 3,205 cases to the surgical service, performing 343 operations. Among these patients 25 deaths occurred, 12 of them being preoperative.

Although designated as a surgical unit, this hospital always had a fairly large proportion of its cases in medical wards, receiving a total of 2,388 medical cases, with respiratory diseases predominating, in October and November. Preventive measures for these were the use of masks and the "cubiculizing" of wards by means of sheets strung across the room on wires. Total deaths from disease numbered 65, of which 45 occurred in October.

There were few unusual features in connection with the laboratory work. Pneumonia, especially that following influenza, was very severe, with an overwhelming toxemia and a high mortality. Hemorrhagic conditions in the intestines were found by post-mortem in a number of cases which primarily had presented pulmonary symptoms. There were many cases of enteritis, which seemed largely due to dietetic errors. Many influenza cases presented abdominal symptoms resembling those of appendicitis in the severity of pains in the right lower abdomen.

The X-ray department utilized a total of 489 plates and 754 films. The number of X-ray examinations was 966.

The dental service cared for 800 patients, giving 1,074 sittings.

BASE HOSPITAL NO. 82⁺

This unit, with 34 officers and 192 men, moved to Toul on September 27, 1918, where it occupied the Luxembourg Barracks. By the 28th it had a normal capacity of 1,120 beds, 250 emergency beds, and space in a receiving tent and an annex. At that time there were enough surgical supplies for three or four tables. The laboratory had supplies for clinical work, but the X-ray laboratory was not equipped. There were no orthopedic appliances, but

there was a sufficiency of beds, quarters, bedding, mess equipment, ward equipment, food, and medicines. Material to meet all deficiencies had been requisitioned and was expected within a few days. The American Red Cross equipped this unit almost completely. It occupied 30 buildings which had been turned over by that organization through an arrangement made with the French Government, 10 being one-story structures which accommodated 150 patients each, and 10 being other structures of six rooms; the latter were set aside for nurses and officers. The other buildings were used as offices, store-rooms, etc. This formation operated as an Army hospital and was not considered a Red Cross unit, though it occupied buildings and utilized equipment which had belonged to that society. Its official numerical designation, however, was followed by the words "Red Cross Foundation," in parentheses, thus indicating its obligation. This unique addition to the official title of Base Hospital No. 82 was due to the following facts: A Red Cross unit, commonly known as "McCoy's unit," from the name of the officer of the Medical Corps who was placed on duty with it when the Red Cross placed it in control of a hospital at Chateau-Thierry, had been sent from the Marne area to operate a hospital at Toul during the St. Mihiel operation. The hospital was one which the American Red Cross had been operating for French civilians, but in this emergency the society agreed to evacuate its patients and to turn it over, with its equipment, to the Army. The hospital, which was then designated Army Red Cross Evacuation Hospital No. 114, was reinforced by the personnel of a field hospital. After the St. Mihiel operation, "McCoy's unit," which now consisted almost entirely of army officers and enlisted men and Red Cross nurses, was moved to Villers-Daucourt, where it operated during the Meuse-Argonne operation. Base Hospital No. 82 took over the premises and equipment which had been supplied by American Red Cross Military Hospital No. 114.

BASE HOSPITAL NO. 83⁴

On arrival in France Base Hospital No. 83 moved to Revigny, where it arrived September 22 and was united with Evacuation Hospital No. 15. Here 6 officers and 20 enlisted men were detached to organize a 200-bed hospital for influenza and pneumonia cases, as an annex to Evacuation Hospital No. 11, at Camp du Raton, Brizeaux Forrestiere. Other officers and men were distributed among Evacuation Hospitals Nos. 6, 7, 10 and American Red Cross Military Hospital No. 114. On or before November 10 all the detached personnel was reunited at Revigny where, until November 13, Base Hospital No. 83 was under the command of the commanding officer of Evacuation Hospital No. 16. On November 14 the former unit assumed command of the hospital there.

The service rendered at Revigny was chiefly that of an evacuation hospital.

BASE HOSPITAL NO. 87⁴

This unit arrived at the Justice hospital group on October 8, where it took over control of the gas and neurological services of the group, with a bed capacity of 1,700. Only about 1,100 beds were available at first and these were filled by October 11. The unit occupied large stone and cement buildings

divided into rooms that had from 14 to 18 beds each and averaged about 100 beds to each floor. The personnel, both commissioned and enlisted, was about equally divided between the gas and neurological services.

The personnel attached to the organization by local orders consisted of 12 officers, 33 nurses, and 153 enlisted men, but it was anticipated that later their numbers would be considerably reduced, as orders would be issued returning them to their original units. On October 10 total strength of the organization was 48 officers, 33 nurses, and 327 enlisted men. Four surgical teams were organized on the 11th, each consisting of 3 medical officers, 1 nurse, and 2 enlisted men. The laboratory began operations on the 25th. The X-ray plant had already been established in connection with the neurological service. By the date the armistice was signed bed capacity had increased to 1,825, the number of patients varying from 1,200 to 1,500.

Admissions, by weeks, prior to the armistice were as follows:

Date	Medical	Gassed	Neuro-logical
Oct. 12.....	213	456	14
19.....	49	80	
26.....	91	48	
Nov. 2.....	21	205	
9.....	65	173	2

The gassed and neurological sections were situated about 0.8 km. (0.5 mile) apart. The latter was known also as Neurological Unit No. 2. This was located at the western end of the Justice hospital group, where it had a normal capacity of 650 beds and facilities for 300 additional beds under canvas. The greatest difficulties which this unit experienced were those incident to crude sanitary facilities, including inadequate bathing equipment.

The gas hospital section occupied structures which formerly had been used as a hospital by the French for the La Marche Barracks. These buildings, of stone and cement, were all in good condition and were equipped October 3 to care for 1,000 patients. There was sufficient space to provide for considerable expansion.

CONTAGIOUS DISEASE HOSPITAL AT TOUL⁴

On October 4 the contagious disease hospital at Toul was located in buildings formerly known as the Perrin-Brichambault Annexe. These buildings, previously a French military hospital, were two and one-half stories high, of brick and cement construction, with a spacious central court. On October 9 the unit had 600 beds erected ready to receive patients. On December 22, it was recommended that the official capacity of the contagious hospital be 564, with an emergency expansion to 700.

Admissions from October 2 to January 10 varied from 4 to 71 per day, the highest average being for November, when an average of 44 patients was admitted daily. The number of patients during November was about 500, also slightly more than during the preceding and succeeding months. The personnel on duty averaged 6 medical officers and 84 enlisted men.

The unit treated a great variety of infectious diseases, comprising in fact practically every type which appeared in the army overseas.

In a report on meningitis cases for the month of December, note was made that only a few occurred in the same company. The meningococcus of Weichselbaum was isolated in the cerebrospinal fluid of all cases. Twenty-six per cent of the patients were of the fulminating type, 48.1 per cent of the ordinary type, 12 per cent of systemic type, 7.8 per cent chronic, 4.6 per cent intermittent. The total number of cases in this series (that of December) was 64, with a mortality of 35.93 per cent.

SANITATION

Throughout this action, pioneer and labor troops were too strenuously engaged in repairing roads and railways and in assisting to forward ammunition and rations to perform, as formerly, police duties on the battle field, while combatant troops were too fully occupied in defeating the enemy to give attention to the simplest rules of sanitation. It had been made clear to the command that every other consideration must be subordinated to the defeat of the enemy and in responding to this supreme requirement troops often resorted to primitive sanitary practices. Frequently, latrines were not provided, and thousands of animals were, for a time, unburied; but, because of the cold weather, such lack of sanitary precautions was faulty more from an esthetic than from an hygienic standpoint.⁵

With the knowledge that American forces were at death grips with a powerful and ruthless enemy, medical officers at the front refrained from making recommendations that common sense declared impracticable, confining their efforts in sanitation chiefly to the provision of good water and food to the troops in line and to the prevention of the spread of epidemic disease. They insisted, however, and with success, that labor troops police the battle field when discharge of this duty did not interfere with their assistance to the supply service. In the terrain back of the battle lines customary standards of sanitation were maintained despite the handicaps imposed by torrential rains and deep mud. As was the case at the front, provision of good water and suitable food and control of epidemics were considered the primary sanitary requirements. Notwithstanding the adverse circumstances under which all labored and the hardships to which troops were exposed, the rate for admission for influenza was lower in the First Army than among troops in the base sections and training areas.⁵

REPORT OF THE INSPECTOR GENERAL ON MEDICAL DEPARTMENT ACTIVITIES IN THE MEUSE-ARGONNE OPERATION

The following extracts are from the report of the inspector general, A. E. F., made on December 11, 1918, to the commander in chief, concerning activities of the Medical Department in the Meuse-Argonne operation.⁶ In common with such reports generally, it especially stresses defects noted.

Notes made by the Inspector General, A. E. F. During active operations from 12th of September, 1918, to 11th of November, 1918.

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IV. HOSPITALIZATION:

A. *Evacuation of wounded.*—

1. Evacuation of wounded from the battle field: The succor of wounded in the battle field was, on the whole, prompt, and patients began to pass through the battalion and regimental aid stations in a short time after the offensive began. When the line became stationary and resistance of the enemy increased, it was often very difficult to get the wounded in, even the walking wounded, for the enemy machine-gun fire was very heavy and many lay for hours in shell holes and other protected places before litter bearers could reach them, or ambulatory patients could walk back to the aid stations with any safety.

2. Personnel: The supply of personnel for succor of wounded varied as the divisional sanitary personnel was in some divisions augmented by a certain number of line troops from each company. These were trained in first-aid work and were available as litter bearers when needed. This personnel was provided for by corps orders in the First Corps, while in the Fifth Corps the detail of line troops as litter bearers was not permitted. This made a shortage of bearers in divisions of this corps, and it was necessary to augment the regimental sanitary personnel by a certain number of soldiers from ambulance companies when they were available.

Under the new tables of organization, the regimental sanitary personnel will be very materially increased, but the present allowance of personnel is not adequate to care for the wounded when casualties are heavy, and it would seem wise to make uniform provisions in all corps to provide for additional personnel to assist the regimental litter bearers in case of emergency.

3. Evacuations of battalion and regimental aid stations were made, as a rule, by divisional ambulances, but frequently heavy shell fire prevented ambulances from reaching these stations, and the patients were littered back to ambulance heads or to advance dressing stations by personnel of ambulance companies. Evacuations from dressing stations to triage and field hospitals was always by field ambulances.

Many divisions arriving in the area reported heavy shortages of ambulances, mounting often to entire ambulance companies. These shortages were made good, as far as possible, by evacuation ambulance companies and S. S. U. units, etc.

Evacuation of triage and field hospitals were under the control of the corps surgeons and made by evacuation ambulance companies. A large number of trucks were also used for transportation of the wounded. Most of the less seriously wounded were transported by trucks, and a relatively small number of litter patients were similarly transported.

4. Evacuation time was, on the whole, satisfactory. The time between the receipt of wound and arrival at the triage averaged about 5 or 6 hours, and to evacuation hospitals, 10 to 16 hours. Many patients arrived in much shorter time, and again, in some cases, considerable delay occurred. The delay mentioned above in evacuating battle fields was due to very heavy machine-gun fire directed at sanitary personnel and wounded, as well as at combatant troops; shell-riddled terrain making litter bearing extremely difficult; and a local shortage of litter bearers. Instances have occurred where four litter bearers consumed as many hours in the transportation of one patient from the battle field to the advance dressing station. Delays in reaching dressing stations were mainly due to extremely bad condition of roads, road congestion, and block, which frequently held ambulances for many hours. This was especially the case after the preliminary advance of October 26. There were isolated instances where the triage and field hospitals were taxed to their limit through the delays in evacuating, sometimes due to the shortages of evacuation ambulance companies or delay in their reaching these stations. This caused temporary congestion at the hospitals, but no hardships to the patients, as they were sheltered, fed, and given the required treatment.

With the improvements in road conditions and road policing, as well as increased experience and efficiency on the part of the hospital personnel, these delays became less frequent and during the advance, beginning November 1, the evacuation time was excellent in spite of the great distance between the line and the various evacuation hospitals.

5. Distribution of wounded to evacuation and mobile hospitals: Under the system in vogue at the beginning of the offensive of October 26, for distribution of patients to the various evacuation and mobile hospitals, some hospitals received fewer wounded than their bed and operating capacity justified, while others were running to the limit of their capacity, and at times were temporarily overcrowded. This was later corrected by placing guards on the feeding roads leading south, and these guards, under the direction of the office of the chief surgeon, directed the flow of ambulances so that all hospitals received a proportion of the wounded corresponding to their bed and operating capacity. This plan tended to make most effectual use of all facilities, prevented overcrowding, and tended to reduce to a minimum the number of wounded evacuated preoperative.

6. Hospital trains: Evacuations to the base hospitals in the rear were made by trains, many French trains being used for this purpose. The supply of trains was at all times sufficient to prevent undue congestion at advanced hospitals, though they were at times taxed to the limit of their capacity. The French trains, especially those of box-car type, are not by any means ideal for the transportation of the wounded, especially seriously wounded, and it is believed that only the less serious cases should be transported on these trains.

The handling of patients on these trains showed certain defects, the most serious of which arose from the fact that the French orderlies could not understand any English, and the American patients, as a rule, could speak no French, and were in consequence unable at times to communicate their needs and secure appropriate attention.

Arrangements were being made to supply American orderlies to interpret and to assist the French attendants.

B. *Care of wounded.*—

1. The first-aid dressing and splints were applied on the battle field or at the battalion aid station. Where these stations were established in dugouts and shattered buildings, some hot food was also given wounded, though frequently with an advancing line this was impossible.

2. Antitetanic serum: In a large proportion of cases, A. T. S. was not administered until the wounded reached the advance dressing station, and in a small percentage of cases had not been given upon their arrival at the field hospitals. Conditions in this respect improved with experience, though even toward the close of the period many injections of the serum were still given at the dressing stations, having been omitted by the regimental personnel.

3. Dressings and splints: The dressing of wounds and the splinting of fractures were, on the whole, well done. A small number of undressed wounds and unsplinted fractures which occurred were investigated, traced to their sources, and by taking early corrective measures their number was kept down to a minimum.

4. Triages and field hospitals: Triages varied as regards their organizations, being in some divisions under charge of the personnel of ambulance companies, while in others a field hospital served as a triage and the other field hospitals were grouped near by, serving as divisional gas, nontransportable, and hospitals for divisional sick.

5. Gassed cases: At the beginning of the offensive, especially in less experienced divisions, there was a large number of patients evacuated from their divisions and diagnosed as "gas suspect," who on their arrival at the various evacuation gas hospitals showed no symptoms of gas intoxication. Some of these were returned to their organizations, but others, because of the difficulty in returning patients to organizations, or because of the congestion of the hospitals incident to the large number of admissions, were evacuated by train to the rear, their services being temporarily and unnecessarily lost. This condition was promptly corrected by retaining all mild and indefinite cases in divisions and evacuating only the more serious clear-cut cases.

A very large proportion of these patients held in divisions were returned to their organizations within a few days.

Many so-called "gas patients" were in reality suffering from exhaustion, diarrhea, etc., as demonstrated by further observation. Accuracy of diagnosis in gas cases is especially important, as symptoms are frequently delayed, in mild cases they are vague.

and the fact that wound stripes are allowed "gas patients," has a tendency to make some men complain of the symptoms of gas poisoning. By retaining these men in divisions, accuracy of diagnosis was assured and malingering discouraged.

6. Nontransportable hospitals: At the beginning of the offensive, October 27, the field hospital groups were located mainly in shattered buildings only slightly in advance of some of the evacuation hospitals. Facilities for operating and postoperative care were very inferior to those available at the latter hospitals, and performing of operations on nontransportable cases under these conditions were not justified.

After the advance of the line, and with it the divisional sanitary organizations, a large number of life-saving operations were done. In some divisions the equipment of these hospitals was elaborate, operating teams were on hand as a correspondingly large amount of work was done, while in others, facilities were very limited and frequently no operative interference was attempted, nontransportable cases being sent to corps hospitals for operation.

7. The work of the Second Division, whose triage and field hospitals were located near Charpentry during the offensive beginning November 1, was of the highest order. The group was well located and planned, and a stone road constructed by the sanitary personnel made ingress and egress of ambulances very easy. All the wards were well heated, the beds clean and comfortable, and the attention given patients compared favorably to that given at evacuation hospitals. Litter racks and bedrests for all beds were improvised from the metal supports of barbed-wire entanglements collected in the neighborhood. The discipline of the personnel was of a high order. The work done was a great credit to the division surgeon, Lieut. Col. Richard Derby, and to the personnel of the various hospitals of the group.

The triages and field hospital groups of other divisions, though less elaborate than those of the Second Division, showed nevertheless a high degree of efficiency and indicated that much had been learned through experience in each of these offensives.

C. *Records.*—

1. In some divisions field cards and envelopes were prepared at the triage, while in others diagnosis tags alone accompanied patients to the rear. This was due to the fact that the supply of cards and envelopes was insufficient to furnish all divisions and that there was also a shortage in some of the evacuation hospitals. This shortage was later corrected to some extent, a considerable number of the forms having been received at the supply dump and distributed to the organizations.

In some inexperienced divisions patients, especially gas suspects, arrived at various hospitals without diagnosis tags, but this was promptly corrected.

In a large percentage of cases diagnosis tags were not signed by the officer who treated the patient, but by the attendant who made out the tag. This is a bad procedure, as it prevents fixing of responsibility for the diagnosis and treatment of any particular case. All cards should be signed, or at least initialed, by the medical officer. Some improvement in this respect was brought about toward the close of the period.

D. *Evacuation hospitals.*—

The work done by the various evacuation hospitals was very creditable, both as regards operations performed and the preoperative and postoperative treatment. The hospitals at the bases to which patients were evacuated were visited to determine after results; the report was favorable both as to the condition of patients on arrival and results of operations performed.

1. Personnel: There was in general a shortage of personnel, especially personnel for labor work, fatigue, litter bearing, and digging of graves. This was especially the case at the beginning of the offensive, but was later much improved on the arrival of additional personnel and labor elements assigned to hospitals.

2. Care of property of patients: During the St. Mihiel offensive provision was not made in most hospitals for the care of property of patients, and a considerable number of officers and soldiers were robbed of money, watches, and other valuables. These cases were investigated, and one thief who had stolen 250 francs from a dying patient

apprehended and the money recovered. Adequate provisions for the safeguarding of the effects of patients were immediately instituted in all hospitals, and only a very few isolated cases of loss of property were later reported.

A large number of officers and some soldiers arriving at hospitals wounded have on their persons considerable sums of money and other valuables, and in several cases company funds of organizations which they command. Several officers stated that they had not been able to deposit this money, though they had frequently attempted to do so, as there were no depositories for company funds. Provision was later made for depositories for company funds in divisions.

3. Salvage of property: This was on the whole very badly handled at first, the quantity of property salvaged from patients, including uniforms, overcoats, puttees, slickers, gas masks, shoes, infantry packs, etc., being tremendous. Labor for caring for and sorting the same and space for storing it were inadequate. This was later corrected by the Salvage Department arranging to collect the same and transport it to the dumps.

4. Laundry facilities: Some hospitals have no laundry facilities, and in others facilities were far below hospital needs. This made it necessary in some cases to salvage soiled linen instead of washing it, and requisition was made on supply depots to replace that salvaged, taxing the linen supply of the dumps. The supply of laundries was always limited, but the shortage was made good to some extent before the closing of the offensive.

5. Signs for hospitals: Cardboard signs were conspicuously placed indicating the location of various hospitals. Due to inclement weather, some of these became effaced, blown down, or destroyed. It is recommended that sheet-iron signs be included in the equipment of these hospitals. These would be posted when hospitals are established and would be taken down and reposted as the hospitals moved forward. If these signs could be marked with luminous paint, it would do very much toward preventing ambulances from losing their way when traveling at night and especially when running without lights.

6. Return of patients to organizations: Many patients admitted to the evacuation hospital, especially early in the offensives, soon recovered, and would have been able to return to duty had suitable machinery been in force to effect their return to their organizations. Under the conditions existing, many of them were evacuated to the rear. Arrangements were later made to send patients marked "duty" to replacement battalions, from which they were forwarded to their proper organizations, thus preventing wholesale evacuations to the rear.

V. BURIAL OF DEAD:

A. During the offensives in the Chateau-Thierry area very little attention was paid to the burial of the dead; many of the dead lay for days without being buried; a large number of isolated burials occurred; and many of the dead were improperly or partially buried in shell holes. In many cases no attempt was made to identify the dead, and approximately 10 per cent were buried unidentified. Strict orders covering the entire subject of the burial of the dead was issued at that time.

B. There has been considerable improvement, but that the technique as yet is by no means perfect is indicated by the fact that an investigation at present being made had revealed neglect on the part of the 2d Division. A large number of isolated burials have been made, and in some cases several of the dead have been buried in a single grave and improperly identified. This condition is an exception, and as a whole chaplains and other burial officers are now carrying out their work in an efficient manner.

C. Sanitation: Sanitation was, on the whole, poor in the entire areas. Buildings, towns, and the terrain in general was left in a filthy condition by the retreating armies, and the American forces had little opportunity to correct the sanitary defects during active operations. This was especially manifested in primitive methods used to dispose of excreta and waste. Latrines were rarely, if ever, constructed along line of march, and men were constantly seen defecating in fields beside roads and soiling the terrain of the villages. This was also characteristic of organizations at the front. Organiza-

tions at rest behind the lines generally built straddle trenches and insisted upon the use of them in general, though numerous exceptions were noted.

As regards kitchen waste and refuse in general, they were at times carted away, though frequently simply left in piles or scattered when organizations left the territory.

D. Water supply: Men during advances frequently had no access to pure water and drank from shell holes or any other source that they could find. In some organizations, even at rest, there were no Lister bags or other facilities for chlorinating water. These conditions were very markedly improved during the latter part of the period, and in some cases marked decrease in gastrointestinal disturbances were brought about through improvements in the supply of pure water to the troops.

E. Clothing: In many divisions there was a shortage of clothing to permit of a change as the men were bathed, and a large proportion of the men were infested with lice. The clothing situation was cleared up through the establishment of a very large dump at Fleury, from which all necessary winter underwear, overcoats, blankets, and other clothing were supplied in sufficient amounts to equip the entire personnel of all divisions.

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- (3) Medical activities in the Zone of the Armies, by Col. A. N. Stark, M. C., undated, 19. On file, Historical Division, S. G. O.
- (4) From reports of Medical Department activities of individual hospitals, prepared under the direction of commanding officers, undated. On file, Historical Division, S. G. O.
- (5) Medical activities in the Zone of the Armies, by Col. A. N. Stark, M. C., undated, 21. On file, Historical Division, S. G. O.
- (6) Notes made by the inspector general, A. E. F., during active operations from September 12 to November 11, 1918. Copy on file, Historical Division, S. G. O.

SECTION V

OPERATIONS CONTEMPORANEOUS WITH THE MEUSE-ARGONNE OPERATION

CHAPTER XXXV

THE SECOND ARMY ^{a, b}

During the activities which were taking place west of the Meuse, other operations had been in progress farther east which were acquiring greater importance. The front had become so extended and the objective so diverse that a single army could no longer handle the situation, and the Second Army had been organized. This army, under General Bullard, established headquarters on October 12, and took over the front from Fresne-en-Woevre to the Seille River, east of Pont-a-Mousson. This line ran from Port-sur-Seille near Clemery to Pont-a-Mousson, down the river to Vandieres, thence by Lachaussee Lake and Doncourt to Fresne-en-Woevre. The line in question was about the same as that held by the American Army at the end of the St. Mihiel operation; when taken over by the Second Army it was occupied by the American Fourth and the French Second Colonial Corps. The Sixth Corps was also assigned to that army, but as yet it consisted of headquarters only, no troops having been assigned to it. On the right, the Second Army connected with the French Eighth Army; on the left, with the American First Army.

The new army had first to perfect its own organization, meanwhile occupying and defending the assigned zone; later, to prepare for offensive action.

The right of the army was astride the Moselle, which here runs generally north through Metz and Thionville. Its valley is about 2 km. (1.2 miles) wide. The bank of each side rises into a series of ridges, well suited to defensive positions. Along these heights, west and southwest of Metz, are the permanent forts forming part of the chain of defenses of the city. In front of our sector of the lines were woods, favorable to defense. On the left, the country was more open and more favorable for offensive operations.

The enemy's withdrawal position, known as the Michel position, along this front had been laid out some two years before, but very little was actually done upon it until now. It was well wired, and recently the enemy had improved the trenches. Behind it were the works of the Metz defenses.

^a For convenience of description it has been decided to cover here the period from the organization of the Second Army, October 12, 1918, until the armistice, November 11, 1918; it should be noted, however, that this advance, which was in the direction of Briey Iron Basin, took place only during the last three days of hostilities. The 79th Division, attached to the French Second Colonial Corps, was a part of the Second Army from October 12 to 23. Its activities have been described in Chapter XXXIII.

^b Abstracted from: Major Operations of the American Expeditionary Forces in France, 1917-18, prepared in the Historical Section, the Army War College.

Metz was strongly fortified, being entirely surrounded by a chain of permanent forts mounting heavy long-range guns. About the forts some work had been done in the nature of temporary fortifications. It was commonly assumed that, in the withdrawal of the German Army, Metz would serve as a pivot, the line running generally north from there.

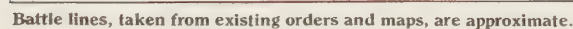
The enemy line being now in motion, and hotly engaged throughout, a blow at the pivot itself should be decisive. To direct a frontal attack at Metz, however, would have meant unnecessary losses, for the advance of the First Army made it possible to direct an attack eastward, north of the city. At the same time, the French could launch one northward, east of the Seille. This was the plan of operations contemplated.

On October 23 the American Sixth Corps entered the line, taking over the right section on the Moselle.

On November 1 orders were issued, giving instructions as to the course to be followed in case of a withdrawal by the enemy. These orders were based upon the assumption that the withdrawal would be to the northeast and east, holding as a pivot the outer defenses of Metz, along the line between Amanviller, Ancy-sur-Moselle, and Verny. They provided for an advance by the left corps in the direction of Conflans, conforming to the movements of the First Army; by the center corps in the direction of Vionville, keeping touch both ways; the right corps was to remain in position and to send forward strong reconnaissances to maintain contact.

On November 6, preparations for a withdrawal having been observed, the army commander decided to "develop the situation by a reconnaissance in force," which was to seize and hold a portion of the enemy main line of defense. It was believed that this action would definitely determine the enemy's intentions, and clear up the question as to the point on which he proposed to pivot.

This mission was assigned to the Fourth Corps, in the center. The attack was to be made down the Rupt de Mad; a line through Charey and the north edge of the Bois de Grand Fontaine was to be taken and held, and reconnaissance pushed to the Chambley railway. The flank corps were to make raids and artillery demonstrations during the operation. While preparations for this were under way, it was discovered that the enemy, disorganized, was withdrawing along the entire front; and the Second Army ordered an attack at 7 a. m. November 10. The Sixth Corps was to push forward west of the Seille River, along the heights on both banks of the Moselle, its left boundary being the line from Preny to Gorze. The direction for the center corps was Vionville; its left boundary, the line Jonville—Jarny. The French Seventeenth Corps, on the left, was to attack toward Conflans, its left following the line Fresnes—Parfondrupt—Lantefontaine. On account of the wide front occupied, the army did not possess sufficient strength to make a general attack along the whole line; therefore, the action was begun by vigorous attacks at selected points, which did not, in fact, develop beyond local operations because of the cessation of hostilities. The total advance was from 1.5 to 3.5 km. (0.9–2.1 miles) along the whole line.



MEDICAL DEPARTMENT ACTIVITIES

The medical staff authorized by our Tables of Organization for an army consisted of 4 officers, 3 noncommissioned officers, and 8 other enlisted men.¹ This proved quite inadequate, and the commissioned Medical Department personnel at army headquarters consisted in point of fact of many more officers organized by the army surgeon into several administrative sections, which were under his immediate jurisdiction.²

When the Second Army was organized, certain units which have been mentioned in the discussion of the Medical Department activities in the second phase of the Meuse-Argonne operation were transferred to it from the First Army; these were the following:²

Sebastopol, Evacuation Hospital No. 1; Provisional Evacuation Ambulance Company No. 1.

Baccarat, Evacuation Hospital No. 2.

Royaumeix, Evacuation Hospital No. 12; Evacuation Ambulance Company No. 4; Field Hospital No. 117.

Rosieres-en-Haye, Mobile Hospital No. 3.

Aulnois-sous-Vertuzey, Mobile Hospital No. 39.

The following units, though technically under command of the chief surgeon, Services of Supply, were in effect and de facto virtually under the control of an army surgeon. Such jurisdiction over them as he possessed was transferred by the army surgeon, First Army, to the surgeon of the Second Army, when the latter was authorized.

Toul, Evacuation Hospital No. 13; Base Hospitals, Nos. 45, 51, 55, 78, 82, and 87; Neurologic Unit No. 2; gas hospital; contagious disease hospital; medical supply park.

Additional units as follows were assigned to the Second Army:³

Verdun, Evacuation Hospital No. 15.

St. Mihiel, Evacuation Hospital No. 18.

Bernecourt, Mobile Hospital No. 7.

Motorized section, 115th Sanitary Train.

Evacuation Ambulance Companies Nos. 7, 32, 33, 68, 69, 70, and 71.

United States Army Ambulance Sections No. 570 and No. 600.

Field Hospital No. 39, 6th Division.

Ambulance Company No. 39, 6th Division.

The following is extracted from an order issued concerning the plan of communications, evacuation, supply and salvage:

Annex No. 6 to F. O. No. 13.

HEADQUARTERS SECOND ARMY,
November 7, 1918.

I. Evacuation of sick and wounded.

A. Sixth Corps sector and all troops therein:

Seriously wounded: Mobile Hospital No. 3, near Rosieres.

Slightly wounded: Evacuation Hospital No. 1; Sebastopol, 5 km. north of Toul.

Gassed: Base Hospital No. 87, Justice group, at Toul.

Psychiatric cases: Base Hospital No. 87, Justice group, at Toul.

Contagious cases: Contagious hospital, Justice group, at Toul.

Normal sick: Any base hospital of Justice group.

B. Fourth Corps sector and all troops therein:

Seriously wounded: Mobile Hospital No. 39, between Heudicourt and Chaillon.

Slightly wounded: Evacuation Hospital No. 12, near Royaumeix; Evacuation Hospital No. 1, Sebastopol, 5 km. north of Toul.

Gassed: Evacuation Hospital No. 12, near Royaumeix; Base Hospital No. 87. Justice group.

Psychiatric cases: Base Hospital No. 87, Justice group, Toul.

Contagious diseases: Contagious Hospital, Justice Group at Toul.

Normal sick: Evacuation Hospital No. 12, near Royaumeix.

C. French Seventeenth Colonial Corps:

Seriously wounded: Mobile Hospital No. 39, between Heudicourt and Chaillon.

Slightly wounded, gassed, psychiatric cases, contagious diseases, normal sick: Evacuation Hospital No. 13, at Caserne Oudinot, Commercy.

II. *Evacuation of animals.*

6th Corps, Belleville.

4th Corps, Bernecourt.

33d Division, Woinville.

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The hospitalization problem of the Second Army differed from that of the First Army in that in the former the base hospitals at Toul were within ambulance distance of the lines. At the time of the armistice the hospitals forming the Justice Groupe at Toul had a capacity of 17,000 beds. In addition to the Justice Groupe, a base hospital was established at Commercy, with a capacity of about 5,000 beds. Another was established at Lerouville, while arrangements had been made for taking over French hospitals at Nancy which would have afforded about 15,000 beds. Therefore, in future operations, had they occurred, the area of the Second Army could have been supplied with about 35,000 base hospital beds to which ambulance evacuations could have been made without the use of hospital trains.⁴

Neurological Hospital No. 3 was established at Varvinay, an advanced position within 4 km. (2.4 miles) of Mobile Hospital No. 39, which modified the evacuation order previously issued.⁵

The plan of hospitalization, evacuation, and supply in operation at the time of the armistice provided for an advanced office of the army chief surgeon at Bernecourt, where the officer in charge of hospitalization was posted, as also were the evacuation officer in control of a pool of all motor ambulances available and an advance medical supply depot. Liaison was established with the corps and divisions, with evacuation and mobile hospitals, with the base hospital group at Toul, and with the hospitals at Commercy and Nancy. The situation required constant supervision of hospitalization in order so to direct the flow of patients as to prevent congestion and to hasten evacuation, and the provision of advanced sites for the mobile and evacuation hospitals to keep pace with any advance of the troops. Casualties during the last few days of the operations were comparatively few and were not enough to severely tax the sanitary units engaged in hospitalization and transportation.⁵

Within the Second Army area were many miles of a 60-cm. light railway. A plan was made for the utilization of this system which it was thought might be of service, especially during periods of relative inactivity, but the result

was unsatisfactory, as the closed cars available were top-heavy and often jumped the tracks. Open cars were then employed, equipped with upright posts and chains or straps for the support of litters, the extra equipment being carried on each car. At the time of the Second Army operation 2 trains of 7 cars each were placed at the disposal of the chief surgeon. The agreement for the use of light railways was as follows:⁶

1. Light railways will be employed in evacuation of sick and wounded from points on railway lines in forward areas directly to evacuation hospitals.

2. During active operations all empty rolling equipment returning from forward areas will be available for this purpose except that required for movement of troops, matériel, or ammunition service. During quiet periods a special hospital train will be at the disposal of Medical Department at all times. An operator from light railway service will be stationed at each clearing station and will be connected by telephone with the office of the light railway train dispatcher. Requests for transportation of sick and wounded will not be transmitted to G-4 of the army, but the requirements of Medical Department will be met without delay. Trains of wounded will have precedence over all traffic except ammunition, troops, and material destined for the front.

3. When practicable, light railway sidings will be installed at evacuation hospitals upon request of the chief surgeon of the army.

4. Corps and division surgeons will take into consideration the location of both light railways and roads in selecting triage or sorting stations.

5. The Medical Department will provide all necessary personnel for loading and unloading the sick and wounded and for their care en route.

6. Medical equipment necessary for hospital trains will be provided by the Medical Department.

All Medical Department transportation was supervised, distributed, and administered by a medical officer in the office of the army chief surgeon. Ambulance companies and evacuation ambulance companies were assigned to evacuation hospitals and to the Fourth and Sixth Corps.

The general plan of evacuation within the army area was the normal one of evacuation to divisional hospitals by divisional sanitary trains. Corps ambulances supplemented by army reserve ambulances transported patients from divisional hospitals to evacuation and mobile hospitals, or to base hospitals acting as evacuation hospitals. A central pool of ambulances under direction of officers detailed from the army surgeon's office was in readiness to supplement the activities of other ambulances and to provide evacuation as needed by evacuation and mobile hospitals.⁷

Our Tables of Organization for a field army did not provide for a medical officer to supervise the service of the army troops, exclusive of the army Artillery. The multitude of army troops scattered throughout an army area and frequently changing station were without the control of corps or divisions, and so required a medical officer specifically detailed to supervise their medical and sanitary service. Provision of medical and ambulance service for these miscellaneous troops, who were widely distributed over the army area and in the interstices between divisions, was one of the most difficult problems encountered by the chief surgeon of the Second Army. The following plan was adopted and an officer was assigned to its execution:⁸

1. The region occupied by army troops, 2d Army, will be divided into definite areas, in each of which an ambulance station will be established.

2. From these ambulance stations daily rounds will be made covering the camps of all troops within the area.

3. These stations will be designated by the chief surgeon, 2d Army, and changes will be made by him in their locations and the area covered as variations in the concentration and positions of the troops may require.

4. The senior medical officer at the ambulance station will provide a medical officer to accompany the ambulance on its rounds and will furnish him with such medical supplies as may be necessary. He will likewise arrange and regulate the proper handling of emergency calls. Lack of ambulances and the need for economy in their use require that the emergency in each case be a real one.

5. Ambulances on their rounds will be accompanied by a medical officer. In addition to the evacuation of the sick from organizations provided with a medical officer, the ambulance surgeon will take sick calls for any organizations not so provided.

6. Ambulances for this service will be detailed under direction of the chief surgeon, 2d Army. The commanding officer of the ambulance company from which the ambulances are drawn will retain technical control of this transportation, see that proper supplies are provided and repairs made. He will replace and change ambulances on duty at various stations as may be necessary to keep them in proper running order.

7. The commanding officer or surgeon of any unit of army troops to which this service is not extended shall communicate directly with the chief surgeon's office, 2d Army, in order that proper arrangements can be made.

Special directions were given to medical officers furnishing this attendance, and reports of their activities were required. To supplement this method of meeting the situation, instructions were issued to corps and division surgeons to furnish medical attendance and ambulance service to all army organizations stationed within their areas.

The plan mentioned of ambulance rounds covering certain areas, with daily visits by the medical officers in charge, gave satisfactory results. It should be understood in this connection that most of the army troops were divided into small units which rendered it impossible to attach Medical Department personnel to each of them. Frequent changes of station, and, in many cases their isolated location, still further complicated the situation.^c

The successful operation of the system adopted was found to depend in large part upon simplicity and elasticity. Constantly changing conditions required constant readjustment; and a plan complicated by establishment of many collecting points and dependent on the cooperation of various agents would not have brought about satisfactory results. Patients were evacuated

^c The gradual introduction of Services of Supply organizations into the area of the Second Army and the transfer of Second Army units to the Services of Supply, commencing shortly after the armistice and continuing through the period January 1 to April 1, 1919, transferred the service of the Second Army more and more into that belonging to the advance section, Services of Supply. No distinction was ever made between Second Army and Services of Supply troops and the management of Medical Department affairs in the respect mentioned continued under the supervision of the chief surgeon, Second Army, until March 28, 1919, when the Medical Department personnel and units engaged in the work were definitely turned over to the advance section and with them the management of the service. Certain modifications made in the original plans from time to time as conditions required should also be noted. The following were the most important: (1) For units of the Air Service it was necessary to station ambulances at flying fields to be available for duty at all times. (2) For Engineer and Pioneer Infantry on demolition or other hazardous service, in addition to the ambulance on the ambulance run, other reserve ambulances were stationed at specified points on call in cases of emergency, as accidents not permitting delay might require their use at any time. (3) For outlying organizations too remote to be included on a regular ambulance route separate ambulances had to be assigned. (4) For organizations in and about the larger centers, such as Toul, stationing groups of ambulances on call was found to be the best assignment for meeting evacuation requirements.⁹

in each case to the nearest hospital without delay. Retention of technical control of ambulances by ambulance companies as was the case insured economy in the operation and proper care of transportation.⁹

The main source of supply for the Second Army was the advance medical supply depot at Is-sur-Tille, whenever supplies were forwarded through the regulating station at the same place. To provide for replacements and immediate issues to troops in line, a medical supply park at Toul which had been established by the First Army was transferred to the Second Army. This was stocked on the basis of 10 divisions; later, when the Second Army became actually organized, on a basis of 15 divisions. This depot was restocked by "replacement requisitions" as provided by General Orders, No. 44, General Headquarters, A. E. F., 1918. Immediate issues were made to troops upon requisition for 10-day periods, approved by the chief surgeon, Second Army. To facilitate further the prompt issue of supplies in emergencies, an advance depot was established at Bernecourt and another at St. Mihiel in the Second Army area. These depots were stocked with articles most needed by troops in action, viz, blankets, litters, cots, splints, dressings, and antitetanic serum. The supplies here were issued direct, requisitions being approved later. After the armistice, when the troops moved forward, other supply depots were established at Mars-la-Tour and at Walferdange, Luxembourg.¹⁰

The operation of the system of requisition and supply described in General Orders, No. 44, was suspended during activities, and replacements (exclusive of initial equipment) were at all times made on approval of the army chief surgeon. During quiet periods and for all initial equipment the provisions of General Orders, No. 44, General Headquarters, A. E. F., 1918, were complied with. That is, the requisition prepared by the divisional medical supply officer was approved by the division surgeon, and by G-1 of the division, and then forwarded, as was the case with other supplies, to G-4 of the army, who sent the requisition to the depot, whence supplies were forwarded through the regulating officer.¹⁰

THE SIXTH CORPS

For the few days prior to the operations of November 10, the Sixth Corps was occupied in patrolling its entire front, in making numerous raids, in daily exchange of Artillery bombardments, and in fluctuating activity of Infantry, machine guns, and airplanes. At 7 a. m., on November 10 the Infantry attacked, supported by a rolling barrage, and by 11 a. m., had taken Bois de la Voivrotte, Bois de Cheminot, and Bois de Frehaut. West of the Moselle, it did not attack, due to the inability of the right elements of the 7th Division (Fourth Corps), on the left of the Sixth Corps, to capture the heights of Preny.¹¹

At 5 a. m., November 11, the attack was renewed on the front east of the Moselle, but was stopped at 11 a. m., in accordance with the terms of the armistice.¹¹

The 92d Division was the only division on the front of the Sixth Corps during this action.¹¹

MEDICAL DEPARTMENT ACTIVITIES

Unfortunately no report of the activities of the Medical Department of the Sixth Corps during this action is available.

THE 92D DIVISION

On October 9 our 92d Division relieved the French 69th Division in the Marbache sector. It passed from the Fourth Corps to the Sixth Corps on October 23. The division participated in the attack of the American Second Army, November 10-11, between the Moselle and the Seille Rivers.¹²

MEDICAL DEPARTMENT ACTIVITIES

Upon entering the Marbache sector, Field Hospital No. 366 was established as the divisional triage at Millery, in Adrian barracks, providing 200 beds. Its personnel was increased by six female nurses charged with the care of pneumonia cases, which were treated here with a very low mortality. In connection with the triage a gas hospital was established by Field Hospital No. 367, and near it, in tents, a camp for the treatment of skin and venereal diseases. Forty-three motor ambulances had been received shortly before the arrival of the division in this sector.¹³

Administrative Order No. 5, accompanying Field Order No. 22, 92d Division, read in part as follows:¹⁴

* * * * *

PART V.—*Evacuation of sick and wounded*

(a) Battalion and regimental aid stations will be established by the respective regimental surgeons, in consultation with the regimental commander and under supervision of the division surgeon. In no case will battalion or regimental aid stations be located at the same place as the regimental P. C.

(b) The divisional triage is located at the evacuation hospital at Millery. All cases evacuated from the front line will pass through this triage, where they will be classified and evacuated.

(c) Ambulance Company #365 will establish a dressing station at Atton and will furnish ambulance service from the front line via Pont-a-Mousson—Atton—Loisy—Millery.

(d) Field Hospitals Nos. 365 and 367 will be held in readiness at Millery. Ambulance Companies Nos. 366, 367, and 368 will be stationed at Millery.

(e) Commanders of battalion and regimental aid stations, ambulance companies, and field hospitals will be held responsible that the roads leading to these stations and hospitals are *plainly marked*.

(f) Cases will be evacuated as follows:

I. Severely wounded: To Evacuation Hospital No. 1 at Sebastopol, 5 km. north of Toul, on the Toul—Menil-la-Tour road.

II. Slightly wounded: To Evacuation Hospital No. 14, at Toul-Justice.

III. Nontransportable wounded: To the field hospital at Millery.

IV. Gassed: To Gas Hospital at La Marche section of the Justice Groupe of barracks just west of the city of Toul.

V. Contagious, venereal, and skin diseases: To contagious hospital of the Justice Groupe of barracks just outside the city of Toul.

VI. Sick, nervous and shell concussion: To Base Hospital No. 51, La Marche section of the Justice Groupe, Toul.

(g) The division surgeon will indicate loading points for ambulances.

(h) The 60-cm. tram lines will be utilized in moving wounded to the rear, and cargo trucks will be used to move back the slightly wounded whenever such trucks return empty to the rear.

(i) The evacuation from dressing stations and stations for slightly wounded will be under direction of the Division Surgeon.

* * * * *

About October 25 Field Hospital No. 368 established a triage at Griscourt, and the same system of evacuation was now employed for the troops west of the Moselle. So much of the sanitary train as was not functioning with the hospitals at Millery was moved to Blenod, whence after a few days it proceeded to Jezainville. Distribution of the train was as follows: Field Hospitals No. 366 and No. 367 with an ambulance company at Millery; Field Hospital No. 365, in reserve at Millery; Field Hospital No. 368, at Griscourt; train headquarters and the remaining ambulance companies at Jezainville. When the armistice was signed, arrangements were being made to establish a field hospital as a triage at Pont-a-Mousson.

The divisional consultants were assigned to duty with the triage, where the orthopedic consultant supervised the use of splints and checked the administration of antitetanic serum. Orders required that all wounded and cases of trench foot be given this serum at the battalion aid stations. The amount given at first, 500 units, was later increased to 1000 units.

Hospital facilities at Millery were increased by a mobile surgical unit and a shock team.

When the advance began on November 10 the 365th and 366th Regiments reported a large number of casualties from mustard gas, but half the patients reporting were returned to duty from the regimental aid stations, and from the triage a large percentage more were sent back to their organizations.¹⁵

THE FOURTH CORPS

On November 9 the Fourth Corps occupied the Thiaucourt zone, comprising the Pannes and Puvencelle sectors. The Puvencelle sector was hilly and crossed by the Rupt de Mad. The Pannes sector was rolling, the western half of it being divided by the Etang de Lachaussee. The Puvencelle sector was held by the 7th Division and the Pannes sector by the 28th Division.¹⁶

The enemy was reported to be withdrawing, disorganized, along the entire front; but from 5.30 to 6.30 a. m., November 10, he placed a heavy bombardment along our whole front. Seven a. m., November 10, was designated as "H" hour for the attack required by field orders of the Fourth Corps. At 5.30 p. m. a battalion of the 112th Infantry, 28th Division, attempted to raid Dommartin, but intense enemy artillery fire prevented its advance. This raid had been planned before it was known that there was to be an attack by the corps, and, as it was thought the raid would help the attack, it was allowed to occur. Patrols from the 28th Division were active throughout the morning, but developed no weakness in the enemy lines opposite the division. At 2.30

p. m., November 10, an artillery preparation was laid down south of Dommartin and south of the line Lachaussee—Bois Bonseil. At the same time, the 109th Infantry attacked through Haumont, gaining the railroad track northeast of that place. A battalion of the 111th Infantry made an attack on Dommartin at 3.30 p. m., but was held up on the edge of Dommartin woods by a counterattack. In the 7th Division, repeated attempts to take Mon Plaisir Ferme failed. The day's operations resulted only in a slight advance of the lines held by the 7th Division in the morning. The enemy was still in his position on the Hindenberg line, and showed no intention of withdrawing.¹⁵

Early in the morning of November 11 the 109th Infantry, 28th Division, attacked northeast from Haumont, and reached the wire defenses of the enemy at 8.20 a. m., when word was received that the armistice had been signed, together with orders requiring a suspension of hostilities at 11 a. m. The division commander, 28th Division, issued orders directing a discontinuance of infantry attacks, and that positions be consolidated and held. The enemy opened heavy artillery and machine-gun fire, which was silenced by intense and accurate counter battery and destructive fire from our divisional and corps artillery, continuing until 11 a. m. In the 7th Division no infantry attack was made on November 11.¹⁶

MEDICAL DEPARTMENT ACTIVITIES

The triage for the 7th Division was located at Thiaucourt and that of the 28th Division at Nonsard. Both formations were well forward, thus making possible early care of the wounded after a short haul. Surgical, orthopedic, medical, and gas consultants were stationed at the triages to insure proper treatment, splinting, and sorting before patients were removed to hospitals in the rear. Patients in shock were given appropriate treatment and were held until their recovery was such as to warrant further transportation.

By reason of the short haul and the well-advanced position of Mobile Hospital No. 39—which, in anticipation of the action, had been moved up to a point just west of Heudicourt—hospitals for nontransportable wounded were not established within the divisions, but all severely wounded, including the nontransportable cases, were evacuated direct to that hospital.¹⁷

Field hospitals for the slightly gassed were established in each division, to which slightly gassed patients were sent, while the more serious cases were sent to the Justice Hospital Group at Toul.

Slightly wounded were sent from triages to Evacuation Hospitals No. 12 and No. 1, at Royau-meix and at Sebastopol, respectively. Seriously sick and psychiatric patients were evacuated to the Justice Hospital Group at Toul.

At no time were the triages congested. Evacuation was prompt and proceeded smoothly, and the wounded were given prompt definitive surgical treatment, only a few hours intervening between receipt of wound and surgical treatment, except in a few instances when the wounded were not at once found on the field.¹⁷

THE 7TH DIVISION

During the night of October 10-11 the 7th Division (less Artillery) completed the relief of the 90th Division (less Artillery), in the Puvénelle sector, from the Moselle River, near Champey, to a point northeast of Jaulny. On October 12 the 7th Division passed to the command of the Second Army.¹⁸

On November 9 the 7th Division, as a part of the Fourth Corps, held a line approximately as follows: Charey—Xammes road, just west of Bois de la Montagne, thence generally southeastwardly to Bois de Rappes.¹⁹

On November 10, in the general advance of the Second Army, the division launched an attack in the direction of Vionville, its objectives being Bois des Rappes—Bois de Riche en Côte—Chambley. On the right, Preny ridge was occupied, but the enemy could not be dislodged and our troops were forced to retire, after a 40 per cent loss. On the left, Hill 323 was captured, after a determined attack, but Mon Plaisir Ferme, the enemy strong point, resisted repeated attacks. The day's operations resulted in a slight advance of the line held by the division, but it failed to gain its objectives, as the region in front was one of the last strongholds of the old Michel line, and the advancing line of the division was but a line of patrols. The operations planned for November 11 were canceled by reason of the armistice.¹⁹

MEDICAL DEPARTMENT ACTIVITIES

On October 10, when the 7th Division relieved the 90th, its Medical Department personnel took over from the latter the sites of all corresponding formations. The units of the sanitary train were then disposed as follows: Ambulance Company No. 22, Mamey; Ambulance Company No. 34, Vieville-en-Haye; Ambulance Company No. 35, Vilcey-sur-Trey and Fey-en-Haye; Ambulance Company No. 36, Montauville; Field Hospital No. 34 (the triage), Griscourt; Field Hospital No. 36 (for nontransportable wounded), St. Jacques; and Field Hospitals No. 35 and No. 22 (for gassed and sick, respectively), near Rogeville. On October 19 Field Hospital No. 34, because of the enemy shelling of Griscourt, was moved to Martincourt. On November 1 Ambulance Company No. 22 moved to St. Jacques, and on November 10 organized a triage at Thiaucourt, 13 km. (8 miles) from the front line, where it functioned on November 10 and 11. Field Hospitals No. 22 and No. 35 moved, on October 29, to a point near Minorville, and Field Hospital No. 35, on November 11, to Bouillonville. Patients were sent from the divisional hospitals to Evacuation Hospital No. 1, at Sebastopol, about 15 km. (9.3 miles) in the rear of Field Hospital No. 36.²⁰

The regimental medical detachments were divided into three battalion units, each of the latter consisting of 2 officers, a sergeant, and 13 privates or privates, first class. Two enlisted men from each battalion, Medical Department, unit were assigned to each line company of the battalion while the remainder were at the battalion aid station. At the company aid posts wounded were dressed and splints applied. Those unable to walk were carried on litters to the battalion aid stations, dressings there were readjusted if

necessary, morphine and antitetanic serum were administered, proper markings being made with tincture of iodine on each patient's temple or forehead to indicate that these medicaments had been given, appropriate notations on diagnosis tags being entered at the same time. If a patient was in a state of shock or this appeared imminent, he was treated on the shock table and heat, morphine, stimulants, and sometimes an intravenous injection of gum-salt solution were administered. Patients unable to walk were evacuated by ambulance to the dressing station. Here further examinations were made, splints were readjusted, and bandages changed if necessary, and hot coffee or chocolate were given. All patients were segregated here, and when necessary were undressed and, if facilities permitted, bathed. At the triage records were made, treatment was continued as indicated, and patients were classified for distribution.²¹

The majority of patients received at battalion aid stations were free from shock. The time necessary to transport them to hospital in this relatively quiet sector before the offensive averaged only about 45 minutes. Ambulances evacuated directly from battalion aid stations, for the division had its full quota of these vehicles and battalion stations were relatively well protected.²²

The motor ambulances were pooled at the triage and definite quotas assigned to the service of each dressing station, to the evacuation of the field hospitals, and to service between them. As the several battalion aid stations were the ambulance heads, use of the ambulance company litter bearers in rear of the battalion aid stations was obviated except on a few occasions. The animal-drawn ambulances collected wounded from rear positions, while a large part of the personnel of the company to which they belonged reinforced other formations.²²

Liaison was maintained by two runners posted at each regimental post control and at each battalion aid station.²³ The dressing stations of this division cleared 2,647 patients during the 32 days it was at the front, evacuating nontransportable wounded direct to the surgical hospital (Field Hospital No. 36) and not to the triage. These included patients with aspirating wounds of the chest, wounds of the abdomen, extensive injuries of the head, compound fractures of the lower extremities, and all with hemorrhage who required a tourniquet during transport. Gassed patients were sent in separate ambulances (unless they had been degassed) and were kept recumbent.²⁴

Ambulance Company No. 34 staffed its dressing station at Vieville-en-Haye with 1 officer and 32 men, and, as the sites occupied were well protected, parked three ambulances with the two battalion aid stations and the regimental station of the 34th Infantry. Some of its other ambulances were kept on the alert near the dressing station, while others served the triage. While the division was engaged in trench warfare this dressing station evacuated an average of 20 patients a day and gave dispensary treatment to the personnel of neighboring organizations. This service was typical of that performed at this time by other dressing stations in the 7th Division.²⁵

In the 32 days that Field Hospital No. 34 (the triage) operated here it received 3,121 patients, including 935 gassed, 1,506 surgical, and 680 medical cases. Specialists classified all patients for further distribution, and those

requiring special treatment here, e. g., for shock, received it before they were sent to other hospitals, a few also undergoing emergency operations.²⁶

Field Hospital No. 35, the divisional gas hospital, practiced routine gas treatment for all such patients who had not been treated at the dressing stations. These patients were undressed by a detail which wore gas masks, oiled suits, and rubber gloves. This detail examined, recorded patients, and treated their eyes with a saturated solution of boric acid or a 1 per cent solution of sodium bicarbonate, followed by liquid petrolatum. Then the patient was passed into a room where he was bathed first with soap and water and then with a 2 per cent solution of sodium bicarbonate. He was then dried, warmed, given a hot drink and taken to a ward. After receiving this treatment patients usually slept for 24 hours.²⁷

Field Hospital No. 36—the surgical hospital—reinforced by a mobile surgical unit, passed about 75 per cent of the cases it received through its shock ward, where they were cared for by a special team consisting of 1 medical officer, 2 nurses, and 1 noncommissioned officer. Moderately shocked and postoperative patients were sent to a surgical ward, where appropriate treatment was given for from 24 to 48 hours, after which they usually were fit for evacuation; but patients who had undergone operations for chest and abdominal wounds were held for a longer time. Two operating teams were organized, each consisting of 2 medical officers, an anesthetist, and 1 enlisted man, who was charged with the sterilization of dressings. At this hospital it was found that the following cases almost invariably developed shock: Compound fractures of the extremities, aspirating chest wounds, perforating wounds of the trunk, wounds of the head (except when superficial), those who had experienced severe hemorrhage, especially when they had required prolonged use of a tourniquet in addition, and those who had suffered any major injury several hours before treatment. The average time elapsing between receipt of wound and admission to this hospital was 8 hours, but it was sometimes as long as 20 hours. Patients received more than six hours after being injured were often in poor condition.²⁸

Field Hospital No. 22 enjoyed many of the conveniences of a camp hospital and was therefore able to secure to its patients a greater degree of comfort than would have been possible otherwise. For example, each patient on admission received a bath; laundry facilities were also excellent. Though this hospital primarily cared for the divisional sick, it also received slightly wounded and slightly gassed patients. Of the 482 patients admitted while the unit functioned at Minorville, 152 were returned to duty.²⁹

THE 28TH DIVISION

Beginning on the night of October 15–16, the 28th Division, as a unit of the Fourth Army Corps, relieved the 37th Division in the Pannes sector. With the 7th Division, this division constituted the front line of the American Fourth Corps. Until November 10 the division sent out patrols and conducted raids. On November 10 it participated in the general operations of the Second

Army, from a line that extended approximately as follows: Bois de la Haute Voye, southeastwardly to about 1 km. (0.6 mile) south of Haumont, thence to the Clerey—Xammes road, west of Bois de la Montagne.³⁰

On November 10 the plans of the division were to attack Dommartin, the area between Bois Bonseil and Lachaussee, and toward the enemy trenches northeast of Etang de Lachaussee, gaining the line Lachaussee—Hageville before nightfall. At 3.30 p. m. the town of Dommartin was attacked, but our troops were held up on the edge of Bois Dommartin by a counterattack. In the center the attack was made through Haumont; and at 6.10 p. m. the troops here had taken up a position on a railroad track northeast of Haumont. From this point the line extended generally northwestwardly to Ferme des Hauts Journaux.³⁰

On November 11 the 55th Brigade was designated as the attacking unit, while the 56th Brigade was held as reserve. The attack of the 55th Brigade was made by pushing the 109th Infantry forward northeast from Haumont. This attack again only succeeded in reaching the enemy wire, where it was held up by machine-gun fire from both flanks, and was forced to withdraw. Troops were being reorganized, ready to make another attack at 8.30 a. m., when word was received, at 8.10 a. m., that the armistice had been signed, effective at 11 a. m. At about this time the enemy artillery opened all along the line in great force, and our artillery was directed to fire every gun in retaliation. This fire was kept up until just before approximately 11 a. m.³⁰

MEDICAL DEPARTMENT ACTIVITIES

In the Thiaucourt sector, Field Hospital No. 109 was first located at Bouillonville, whence, on October 30, it moved to Nonsard. There a large barn and surrounding buildings furnished fair facilities for a hospital and for quarters of the personnel. The site was constantly exposed to shell fire and several of the buildings were injured by fragments of shell and shrapnel, but the number of patients admitted daily was not large, as the sector was comparatively quiet. When the armistice was signed Field Hospital No. 104 was in active operation as the divisional triage—a capacity in which it had served since it entered upon active operations. Its grand total of admissions was 8,556 patients.³¹

Field Hospital No. 110, charged with the care of gassed and sick patients, after operating two days at Bernecourt moved, on October 19, to Essey-et-Maizerais, where it erected eight ward tents and two bathhouses. Here it admitted 632 patients before the armistice was signed.³²

Field Hospital No. 111, after the 28th Division left the jurisdiction of the First Army, moved successively to Ferme Boyer, Minorville, Bernecourt, and on October 30 to Buxerulles, occupying there some barns and German-built shacks. This hospital, which received most of the sick, cared for more patients at this location than at any other, as its stay there lasted from October 30, 1918, to January 8, 1919.³³

Field Hospital No. 112, which cared for the wounded, took station in Essey-et-Maizerais, on October 18, occupying a barn where it began operation on the 20th. At first it discharged triage duties, but was soon relieved of these, Field Hospital No. 109 taking over all such service.³⁴

GENERAL MEDICAL DEPARTMENT CONSIDERATIONS

ARMY HOSPITALS

What has been said in Chapter XXXIV concerning the histories of army hospitals in the Meuse-Argonne area equally applies in connection with those which served the Second Army. (Some further description of certain of these units which operated at Toul under the control of the First Army during the St. Mihiel operation, and prior to October 12, during the Meuse-Argonne operation, is given in Chapters XVIII-XXXIV.) All in all, however, information concerning Second Army hospitals is generally of very little value, and for this reason the following account of their activities is incomplete and imperfect.

MOBILE HOSPITAL No. 39 ³⁵

This unit has been described in part in the preliminary chapter on mobile hospitals, and its activities during the St. Mihiel operation are noted in Chapter XVIII. For several weeks after that attack it admitted patients from neighboring units, though it had been transferred to the Second Army on October 9. October 30, Mobile Hospital No. 39 was ordered to move to a station on the road between Chaillon and Heudicourt, some 32 km. (20 miles) distant. Here admissions began promptly, the first case being operated 11 hours after arrival of the first truck load of equipment. The hospital received some 250 seriously wounded or nontransportable patients during the last two days of its activity during operations.

A convenient narrow-gauge railroad was utilized to bring up some supplies, but no casualties were evacuated over it.

At the Chaillon-Heudicourt station the hospital admitted, between November 1 and December 20, 427 patients, which it classified as follows:

Battle casualties	312
Operated upon.....	239
Not operated upon.....	73
Died without operation.....	9
Died following operation.....	21
Acute appendicitis.....	6
Surgical conditions unoperated.....	63
Sick from command and other units.....	25
Surgical conditions operated, exclusive of appendicitis.....	12
Total admissions.....	427
Total deaths	30
Total percentage deaths.....	7

OPERATIONS

Patients operated on for battle casualties.....	235
Operations on above patients.....	388
Total deaths, including admitted dead.....	30
Total death percentage, battle casualties.....	9.6
Percentage of operative deaths.....	8.9
Number of cases débrided.....	226
Number of nonbattle casualties operated upon.....	12
Number of appendectomies.....	4
Total number of patients operated upon.....	241
Total operative death percentage.....	8.7

Average time elapsed between receipt of wounded and operation,
7 hours 10 minutes.

Average time elapsed between receipt of wounded and admission
(evacuation time), 6 hours 10 minutes.

CLASSIFICATION OF WOUNDS

1. Head:	
Penetrating.....	8
Nonpenetrating.....	35
2. Chest:	
Penetrating.....	6
Nonpenetrating.....	7
3. Abdomen:	
Penetrating.....	16
Nonpenetrating.....	1
4. Extremities:	
With fracture.....	54
Without fracture.....	231
With nerve or large blood vessel injury.....	9
5. Locality not stated.....	39
6. Trunk.....	34
7. Cord.....	3

MOBILE HOSPITAL No. 3³⁶

On September 24 this hospital relieved Field Hospital 359 at Rosieres-en-Haye, when it established a hospital for nontransportable wounded. Here it employed four operating tables with six teams. On October 9 a fire broke out in the X-ray room, destroying the entire hospital, including its records, and nothing but the tentage was saved. The hospital remained at this station until December 20, when it returned to Evacuation Hospital No. 1 at Sebastopol Barracks, near Toul, where it formerly had served.

MOBILE HOSPITAL No. 7³⁷

After serving at Ferme de Suippes and Somme Py, on November 7 Mobile Hospital No. 7 received orders to proceed to Berricourt, where it arrived on the 9th. Erection of all tentage had not been completed when the armistice became effective and the unit ceased to function.

EVACUATION HOSPITAL No. 1³⁸

This unit was permanently stationed at Sebastopol Barracks, north of Toul, where it had been located since February, 1918. Its organization and

earlier activities have been discussed in Chapter XVIII. Too far to the east to receive casualties from the Meuse-Argonne battle fields, it was transferred to the Second Army October 9, 1918.

EVACUATION HOSPITAL No. 2³⁹

This hospital was permanently established at Baccarat, Meurth-et-Moselle, where it occupied a large set of French barracks on the outskirts of the town. As there was no violent fighting in this sector it did not receive many wounded, but in October, 1918, cared for large numbers of influenza patients from the 81st Division. The hospital was transferred to the Second Army on October 9, 1918, and it was planned that it should serve as a base hospital. It was exposed to six air raids during its service.

EVACUATION HOSPITAL No. 12⁴⁰

Arriving at Royaumeix on October 9, Evacuation Hospital No. 12 was quartered in an old French hospital consisting of four groups of Adrian barracks. On October 9 it was transferred to the Second Army. During its stay at Royaumeix it received 2,700 patients, including over 1,000 seriously wounded.

EVACUATION HOSPITAL No. 13⁴¹

Arriving in France August 26, 1918, Evacuation Hospital No. 13 took station, September 2, at Chaligny, where until September 23 organization was developed and perfected. The unit then moved to Toul, where it occupied a part of the Justice Groupe of barracks, and was in reserve from September 23 to October 12. It then moved to Champigneulle, where it admitted 237 patients, and then, October 31, to Commercy, where its admissions prior to January 1, 1919, numbered 2,145, of whom 1,117 were received from November 9 to 12. Of the total cases admitted, 1,071 were surgical, including 525 battle casualties and 163 injuries caused by accident. Three hundred and forty-nine operations were performed. Among the 1,416 medical cases admitted, the most numerous were influenza, 345; gassing, 161; mumps, 150; and bronchitis, 140. All respiratory cases were placed in cubicked wards, while cases of measles and meningitis were isolated in separate rooms. Two hundred and twenty cases were treated in the eye, ear, nose, and throat departments; in the dental department 30 cases were cared for who required oral surgery, in addition to over 1,000 others.

The X-ray laboratory made over 2,000 examinations, almost all of which were fluoroscopic, but few plates being utilized, while the pathological laboratory made 247 examinations in the same period.

EVACUATION HOSPITAL No. 15⁴²

On September 21 Evacuation Hospital No. 15 arrived at Revigny, where it replaced a French hospital and shortly thereafter was joined by Base Hospital No. 83. As service here was not active, a number of officers were sent for temporary duty to other evacuation hospitals, namely, Nos. 6, 7, 9, 10, 11, American Red Cross Evacuation Hospital No. 114, and American Red Cross

Hospital No. 110. After the hospital moved to Glorieux, October 13, most of its detached personnel rejoined and was reinforced by operating, splint, and emergency medical teams and 20 nurses. At this place the unit at first received the nontransportable patients from the 33d and 79th Divisions, but after the field hospitals of those commands left the vicinity it admitted all classes of patients. From September 21 to November 17 it received 2,639 surgical patients and performed 1,235 operations. Admissions between the latter date and January 1, 1919, included 1,575 surgical patients, upon whom 151 operations were performed, with 5 deaths.

At both Revigny and Glorieux medical patients were cared for in wooden barracks accommodating from 15 to 40 beds. They were classified and distributed as "general medical contagious," influenza, pneumonia, and psychiatric, but at Glorieux prior to the armistice only a few medical patients were admitted. Immediately after the signing of the armistice the number of medical patients received increased greatly, and by the time the unit closed, in April, 1919, they had totaled 4,761.

During the Meuse-Argonne operation the dental service was occupied chiefly with surgery of gunshot wounds of the jaws. In none of these was infection by gas-forming bacilli noted. While the unit was at Glorieux, the eye, ear, nose, and throat service was occupied chiefly in the extraction of foreign bodies and in enucleations. The total number of patients cared for by this department of the hospital was 4,500, of whom 2,000 received treatment of the nose and throat, 2,000 of the ear, and 500 of the eye. The X-ray department examined every patient before he was sent to the operating room; i. e., from 75 to 200 patients a day in active periods. Roentgenograms were made only in joint cases where fracture was suspected and in those cases where a strongly suspected fracture could not be detected by visual fluoroscopy. The pathological laboratory was occupied by routine examinations, including wound bacteriology cultural tests and sanitary bacteriology, thus promoting diagnosis, treatment, and prognosis in both the medical and surgical services.

EVACUATION HOSPITAL No. 18⁴³

This unit arrived at St. Mihiel November 3, 1918, and its first casualties were received November 10; on the 12th all casualties were evacuated, and on the 24th the unit was attached to the Third Army and operated at Briey.

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CHAPTER XXXVI

MEUSE-ARGONNE (CHAMPAGNE) OPERATION (2D AND 36TH DIVISIONS)

YPRES-LYS (FLANDERS) OPERATION (37TH AND 91ST DIVISIONS)

MEUSE-ARGONNE (CHAMPAGNE) OPERATION ^a

It should be kept in mind that our attack in the Meuse-Argonne was a part of the general offensive which extended along almost the entire front of the allied armies, from the English Channel to the Vosges Mountains; the field orders of the First Army habitually gave information of the progress made in Flanders, as a part of the general situation, just as they mentioned the advances on their own front. The British and the Belgians were on the move eastward; the French, between them and the Americans, were advancing along the line of the Aisne. The French Fourth Army was working in intimate cooperation with the American First Army: to indicate this relationship, American troops which served in that French Army are given credit for participation in the operation, under the title "Meuse-Argonne (Champagne)."

When the Germans were thrown back at the first battle of the Marne, the line stabilized in Champagne between Souain and Somme-Py. It was here that the French Twenty-first Corps, of the French Fourth Army, was to attack. The French asked for American assistance in this region, and on September 23 orders were issued at American General Headquarters, placing our 2d and 36th Divisions at their disposal. The 2d Division was near Toul, having just reached there after participating in the St. Mihiel operation. It was fully equipped and prepared for any duty. The 36th Division was in the Bar-sur-Aube training area, never having been in line; it was about 20 per cent short in strength and lacked much of its equipment, notably transportation. Its artillery was not with it. These divisions were used in a local operation known to us by the name of the principal feature of the ground, an elevation called Blanc Mont.

The country hereabouts, after four years of trench warfare on stationary lines, was a desolate waste. The German front-line trenches had run along the Navarin Farm ridge, which crossed the Souain—Somme-Py road, at right angles, halfway between the two places. The Navarin ridge lay 4 km. (2.4 miles) north, and rose some 60 meters (65 yards) above the valley to the south. It was wooded, but not densely. At its eastern end was Orfeuil, at its center Medeah Ferme, and at its west end Blanc Mont. North of it the ground fell

^a Abstracted from Major Operations of the American Expeditionary Forces in France, 1917-1918, prepared in the Historical Section, the Army War College.

away to a whole country, north and south; its natural advantages had been enhanced by observation towers, constructed by the Germans.

Between September 26 and October 1, the French Fourth Army had advanced 4 or 5 km. (2.4 or 3.1 miles) west of the Argonne, and at the point now in question were attacking the German trenches north of Somme-Py, the rearmost of the main line. The Germans were holding strongly, for a surrender of this line meant a retirement of 3 km. (1.8 miles) to the next prepared position on Blanc Mont Ridge. The French were nearing the end of their resources, and called upon the American divisions assigned to them.

THE 2D DIVISION

On October 1, 1918, the 2d Division was assigned to the French Twenty-first Corps in the Fourth Army, and on the night of October 1-2, the 4th Brigade took over the line from Boyau de Custrien on the right to Boyau de Bromberg on the left, theretofore occupied by the French 61st Division and the right battalion of the French 21st Division in the French Eleventh Corps, which was to the left of the 2d Division. On October 2, the 2d Division cleared so much of the Tranchee d'Essen in its sector as was still occupied by the Germans west of the Boyau de la Pirna.

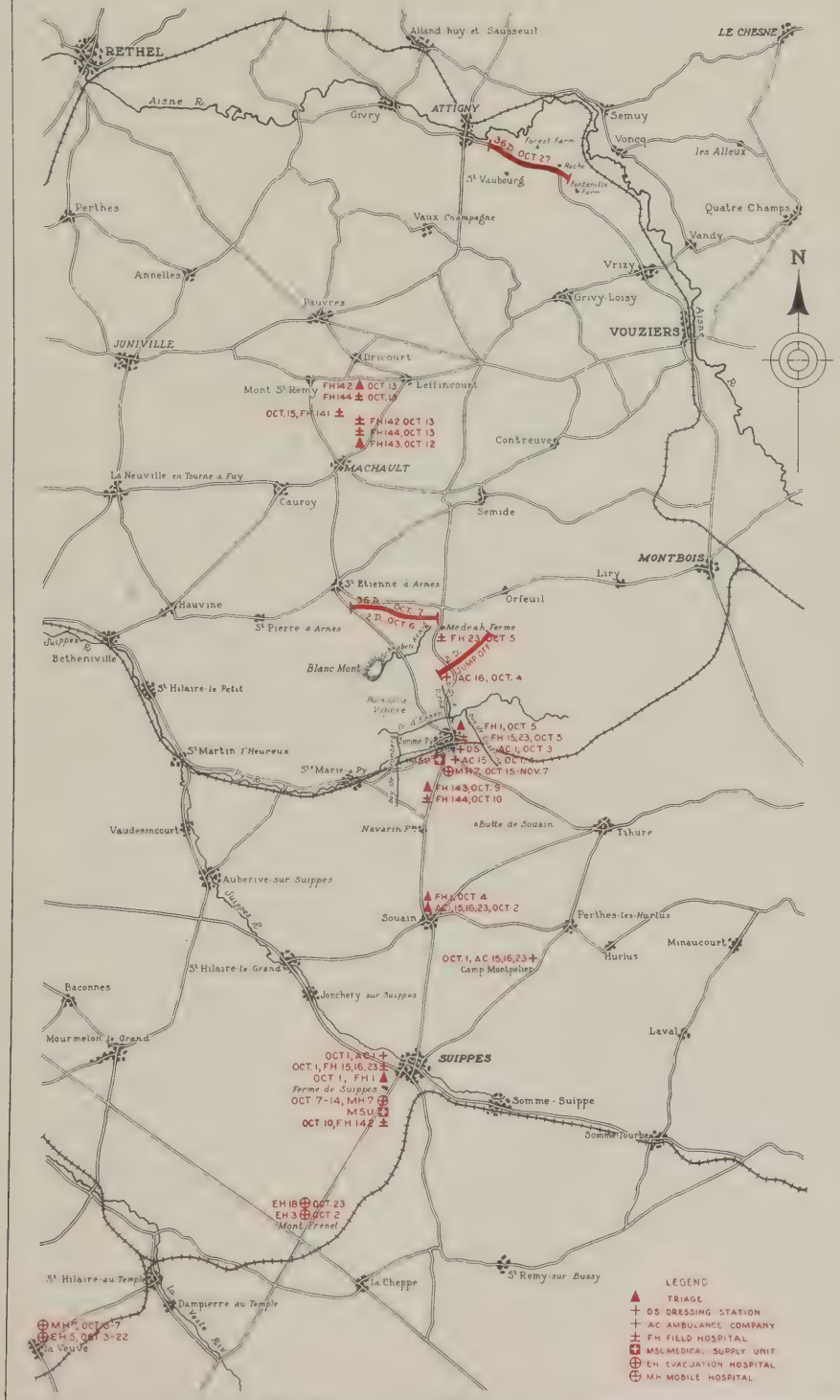
At 5.50 a. m., October 3, as the left flank of the French Twenty-first Corps, the 2d Division attacked behind a creeping barrage, in conjunction with the two other divisions in the line of that corps, and with the French 21st Division of the French Eleventh Corps on its left. The divisional operation was a converging attack by the 3d and 4th Brigades upon the *massif* of Blanc Mont Ridge, the final objective being Medeah Ferme (exclusive)—Schwaben—Konig—Blanc Mont (inclusive). The enemy had strongly fortified the position by coordinated machine-gun emplacements, barbed wire, and trench systems. The attack was successful despite heavy artillery fire and stubborn resistance by the enemy, and the objective was reached according to schedule. On the right the French 67th Division brought its lines up to Medeah Ferme, where contact was established, but on the left the attack of the French Eleventh Corps failed, and our 4th Brigade suffered severely because of machine-gun fire on its left.¹

During the afternoon of October 3, the 2d Division pushed its advance about 1.5 km. (0.9 mile) down the ridge in the direction of the St. Etienne—Orfeuill road—despite fire on both flanks and on its right and left rear, the divisions on its flanks failing to keep contact. The next day, after repulsing powerful counterattacks, the division advanced about 0.5 km. (0.3 mile) but was held up by machine-gun fire on the front and flanks, particularly from a strong point on the western end of Blanc Mont. This point it reduced on the 5th. The next day, the left of the division again advanced.¹

The relief of the 2d Division was begun by the 36th Division on the night of October 6-7, but this was not completed until the 10th, the 2d Division troops that were not relieved continuing to operate with the 36th until withdrawn. The Artillery and Engineers remained with the 36th Division, and until withdrawn the 2d Division remained in close support.¹

MEUSE-ARGONNE (CHAMPAGNE)

Scale in Kilometers



Battle lines, taken from existing orders and maps, are approximate.

ENVELOPE AND PRINTED BY THE ...

MEDICAL DEPARTMENT ACTIVITIES

All units of the sanitary train had reached Suippes by the 1st of October and were located at the Ferme de Suippes, 2 km. (1.2 miles) south of the town, in the following capacities: Field Hospital No. 1, triage; Field Hospitals No. 15 and No. 23, consolidated hospital for nontransportable wounded; Field Hospital No. 16, for gassed and sick. With the field hospitals was Ambulance Company No. 1, while the other ambulance companies were at Camp Montpellier, 4 km. (2.4 miles) north of Somme-Suippes, on the Perthes-les-Hurlus road.²

On October 2 all the ambulance companies established a forward triage in an excellent shell-proof dugout at Souain, which was also used by the French to serve the sectors to the right and left of the 2d Division. Here were gathered the 27 G. M. C. ambulances belonging to the sanitary train and United States Army Ambulance Service Sections No. 556 and No. 606, which were assigned to the division. Transportation was further augmented by two French *char a bancs* (six-seat trucks, of the sight-seeing type) with a seating capacity of 24, which, with 22 ambulances of Evacuation Ambulance Companies No. 5 and No. 7 and the trucks of the sanitary train, were held in readiness near the field hospitals. Arrangements were made that, when requested, trucks of the supply train and of other divisional units also would assist in removing wounded.²

Before the attack, the divisional litter-bearer officer made a reconnaissance, located the battalion stations at the jump-off, and at them posted the ambulance company litter-bearer officers, with their detachments. The system of evacuation was as follows: Enlisted men of the Medical Department followed the attack and dressed the wounded, who were then carried back to battalion aid stations by litter bearers detailed from the line, in the proportion of 12 from each company. The battalion surgeons, relieved of all responsibility for evacuation from their stations, devoted all their attention to the work forward of these. As the battalion stations advanced, the old ones were taken over and cleared by the bearers from the ambulance companies, under their litter-bearer officers, who maintained contact with stations as they advanced.³ The terrain offered little protection, but at times dugouts were found and used. Many aspirating wounds of the chest were closed by sutures or safety pins, with good results so far as transportability of such cases was concerned, fractures were immobilized in Thomas splints, and antitetanic serum was given very early in nearly all cases. Wounded were rapidly removed and congestion rarely occurred.³ The two United States Army Ambulance Service Sections with Ford ambulances, assisted by G. M. C. ambulances, evacuated to the triage, and the other motor vehicles available evacuated from that point to the rear.³ Two-wheeled French litter carts (*brouettes*) were used to some extent in this sector.⁴

Profiting by their experience in the St. Mihiel operation, the ambulance companies kept their kitchens with them. Ambulance Company No. 16 had

its kitchen in concealment near its dressing station, but the other kitchens were consolidated at Somme-Py, and hot food was sent up, so that at least one hot meal and two cooked meals, often both hot, reached the litter bearers daily. This proved a great aid in maintaining their strength and morale under the trying conditions then experienced. Litter bearers from the Engineers materially aided the ambulance company litter bearers.⁴

On the afternoon of October 3 Ambulance Company No. 1 established a dressing station at Somme-Py, Ambulance Company No. 16 taking over its former station at Souain.³ On the 4th the ambulance head was advanced to Somme-Py and Ambulance Company No. 15 reinforced the station there, as the wounded were coming in very rapidly.³ In the meantime, Ambulance Company No. 16 advanced its station to a point 2 km. (1.2 miles) north of Somme-Py, and the triage, Field Hospital No. 1, moved up to Souain. On the 5th the station of Ambulance Company No. 23 "leapfrogged" to a position near Medeah Ferme and Field Hospital No. 1 moved to Somme-Py, where it was joined by the surgical unit (Field Hospitals No. 15 and No. 23).³

The field hospitals were set upon the roadbed of the railroad, on the right of the railroad station, in a position exposed to shell fire should the enemy choose to bombard the location. Many shells passed overhead and fell near the crossroads nightly. Early on the morning of the 8th the town (Somme-Py) was continuously shelled; one "dud" passed through one of the tents of the surgical unit, which was filled with wounded at the time. Operating was resumed at 10 a. m. and continued until 3 p. m., when continued shelling caused the hospital to be evacuated. The surgical personnel resumed operating in conjunction with Mobile Hospital No. 7, at Ferme de Suippes.³

On the 10th Field Hospital No. 1 returned to Ferme de Suippes and the ambulance dressing stations returned on the 11th, but the ambulances remained until the next day, assisting in evacuation of the wounded of the 36th Division, which, at that time, had no ambulances. By the 12th all the medical units of the 2d Division were back in rest billets in the rear areas.⁵

Abundant medical supplies were maintained at the front by returning ambulances and by a German ambulance, which had been captured at St. Mihiel, into which American and French litters did not fit, so that it could not be used conveniently for wounded. The medical supply unit located at Ferme de Suippes kept the ambulance head well supplied with everything needed.⁵ On October 6 it advanced to Somme-Py, where it located beside the field hospitals, which facilitated issues.⁴

The roads were very good, except in No Man's Land, where there were mine craters, around which the Engineers soon built roads of plank, stone, and earth. The distances from Somme-Py to the evacuation hospitals were as follows: To Evacuation Hospital No. 3 at Mont Frenet, 24 km. (14.9 miles); to Evacuation Hospital No. 5 at La Veuve, 45 km. (27.9 miles); and to Field Hospitals No. 15 and No. 23 and Mobile Hospital No. 7, which operated here only a few days, at Ferme de Suippes, 15 km. (9.3 miles).⁴

For a short attack, the medical personnel suffered rather severely. Two battalion aid stations received direct hits, causing several fatalities and many casualties.⁴

THE 36TH DIVISION^b

On the night of October 6-7 the 71st Infantry Brigade of the American 36th Division relieved the front-line troops of the 2d Division, which left some of its own elements in the line and furnished the support. The division line ran more or less along the Orfeuil—St. Etienne road. There was no fighting of importance on the 7th, and on the 8th the advance was only slight. The other Infantry brigade of the 36th Division now came up and relieved the Infantry of the 2d Division in support. The 36th Division took over the command, the Artillery and certain other elements of the 2d remaining attached to the 36th.

On the 10th the enemy was found to be withdrawing. The French divisions on the flanks made progress and the 36th Division was ordered to advance in connection with them. The 72d Brigade relieved the 71st in the front line, and during the next few days advanced steadily to the line Attigny—Givry. The other brigade came up abreast of it, and the line became stationary until the end of the month, when the division was relieved.

Relief began on the night of October 26-27, but the 71st Brigade was left in line to complete a minor operation planned for the 27th. This, called the Forest Farm operation, was intended to expel the Germans from a position across a loop in the Aisne River, west of Seny, which they still held on the south bank.

Orders were issued on the 24th for the capture of this position by the 36th Division. This was accomplished, the losses being very slight on account of the powerful artillery support. This operation ended the service of the American troops in this region.

MEDICAL DEPARTMENT ACTIVITIES

Casualties at first were evacuated to the triage of the 2d Division, at Somme-Py, which continued to function until the evening of October 9, receiving 626 casualties belonging to the 36th Division. Ambulance companies commenced operating on October 7 and were reinforced by United States Army Ambulance Service Section No. 586.⁶ The 24 G. M. C. ambulances belonging to the division went forward on the morning of October 8, and evacuated approximately 1,000 wounded during the ensuing 24 hours, but by noon of the following day all evacuations from the battalion aid stations were being made by United States Army Ambulance Service Section No. 586, so that the ambulances of the 2d Division which had been operating in front of the triage were relieved. That evening military activities had quieted somewhat, but there was a steady stream of wounded passing through the triage.⁷ Through-

^b For map of activities of this division for this period, see Plate LI.

out the day (October 9) the ambulance company directors of the 2d and 36th Divisions worked in conjunction through the regulating station of the 2d Division, which was located at the triage of that division at Somme-Py. This formation was subjected to heavy fire, and it was believed that it was too near the front. Meanwhile, by 7 p. m. of October 9, Field Hospital No. 143 had established the divisional triage (36th Division) behind a small hill about 1.5 km. (0.9 mile) to the south of Somme-Py on the Suippes—Somme-Py road, and Field Hospital No. 141 was receiving the normal sick at Aulnay-sur-Marne. The ambulance section of the sanitary train was moved to the vicinity of the triage during the night, but United States Army Ambulance Service Section No. 586 remained at Somme-Py to evacuate the battalion aid stations. As the personnel of the bearer sections was at this time inactive, it was moved the following morning (October 10) to a still safer location at Souain, where the regulating station for the ambulance service of the 36th Division was now established.⁸

On the morning of the 10th Field Hospital No. 144 was established near the triage to receive nontransportable wounded, and Field Hospital No. 142, at Ferme de Suippes, 1 km. (0.6 mile) south of Suippes, began to receive the gassed. The triage retained no patients, but evacuated them to either the appropriate field hospital or to Evacuation Hospitals No. 3 or No. 5.⁹ Field Hospital No. 16 of the 2d Division, about 6 km. (3.7 miles) from Suippes, also cooperated for a short time in the service of the 36th Division. As each loaded ambulance passed the regulating station, about 5 km. (3.1 miles) in rear of the triage, an empty ambulance moved up to the triage, where six ambulances were constantly kept posted.³

On the night of the 12th the triage, still being operated by Field Hospital No. 143, moved to a point 1 km. (0.6 mile) north of Machault, where it was located in the shelter of a railway embankment on the Machault—Leffincourt road. Here it was joined the next day by Field Hospital No. 144 and by Field Hospital No. 142, which was held in reserve.⁹ Meanwhile, on the 13th a new regulating station with a detachment of ambulances had been established in the suburbs of Machault, on the road to St. Etienne; a few ambulances had been established in the suburbs of Machault, on the road to St. Etienne; a few ambulances had been left at Souain on the regulating station there until the new one was established; and the remainder, except United States Army Ambulance Service Section No. 586, which moved to Dricourt, were parked near the triage.⁸ The ambulance section was again advanced on the 14th, moving to a point on the Leffincourt—Mont St. Remy road near the fork leading to Dricourt and about 1 km. (0.6 mile) south of this town. Casualties now became so few that the regulating station was discontinued. Until the United States Army Ambulance Service section was withdrawn, October 29, five G. M. C. ambulances were posted at Dricourt, and a few others near the triage, while the others were held in reserve.⁹

Field Hospital No. 142, now designated to operate the triage, moved to a point 1 km. (0.6 mile) south of Dricourt, on October 13, where it was joined

by Field Hospital No. 144, still caring for nontransportables, while Field Hospital No. 143 went into reserve north of Machault. Field Hospital No. 141, having evacuated its patients, moved the next day from Aulnay to a point 2 km. (1.2 miles) north of Machault, where it again received the sick from the division. This disposition continued until the division withdrew on October 29.⁹

EVACUATIONS IN REAR OF THE 36TH DIVISION

Evacuation Hospital No. 5, at midnight of October 2, received orders to load equipment at daylight and move from Ville-sur-Cousances to La Veuve, where it arrived October 3. It remained here until October 22, when it moved to Staden, in Belgium. During this period it received 236 gassed cases, 299 medical, 1,602 surgical—a total of 2,137, of whom 56 died. While here the enlisted strength was brought up to 340 men.¹⁰ This hospital had developed and here utilized the system of “set up” described in Chapter XXXIV, p. 818.

Evacuation Hospital No. 3 arrived at Mont Frenet on October 2, and its most important parts were erected under tentage on the same date. The kitchen, which utilized a paulin stretched over framework made of boughs, was soon serving 1,500 people a day. It was supplemented by a diet kitchen. Officers and nurses occupied British marquee tents and the enlisted personnel shelter tents. The site was level, crossed by a narrow-gauge railway and by a ditch which promoted drainage, though later constant rains made the camp very muddy. An abundant supply of good water was available and a rectangular roadway had already been constructed to afford passage to ambulances. The first 10 days, wounded arrived in large numbers, but were easily cared for, evacuations by hospital trains being provided almost daily. During the third week only a small number of patients were admitted, most of these because of illness, and during the last two weeks of the hospital's operation here even professional work was practically nil. Total admissions were 5,802, of which 1,402 were received on October 5 and 4,037 in the first 10 days. Total operations were 718, and total deaths 133.¹¹

On October 11, Evacuation Hospital No. 18 arrived at Mont Frenet, when its personnel was split into three groups and assigned for duty with Evacuation Hospital No. 3, Mobile Hospital No. 7, at Ferme de Suippes, and Evacuation Hospital No. 5, at La Veuve. Evacuation Hospital No. 18 did not function as a unit at this station, as its equipment did not begin to arrive until October 23. On November 2 the organization left for St. Mihiel, where it served the 33d Division.¹²

Mobile Hospital No. 7, in the service of the 2d and 36th Divisions, was located at La Veuve from October 3 to 7, at Ferme de Suippes from the 7th until the 14th, and at Somme-Py from October 15 to November 7.¹³ A liaison officer for our Medical Department was attached to the French regulating station at Connantre to facilitate the operation of hospital trains and liaison with the medical subsection of the 4th section of the American general staff at Chaumont.¹⁴

YPRES-LYS (FLANDERS) OPERATION

In October while we were so heavily engaged in the Meuse-Argonne, the commander in chief received a call from Marshal Foch for two American divisions to help the French Sixth Army and the Belgians who were attacking to the extreme north. In answer to this call the 37th and 91st Divisions (the 91st being accompanied by the Artillery of the 28th Division) were sent. On October 30 these divisions entered the line and methodically overcame the enemy's resistance until they were relieved on November 4. On November 10 they again entered the line and were there when the armistice was signed.¹⁵

THE 37TH DIVISION

On October 17 entrainment of the 37th Division was commenced for participation in the Ypres-Lys operation.¹⁶ On October 22 division headquarters were established at Hoogdele, Belgium, and the division was attached to the French Sixth Army, forming a part of the army group of the King of the Belgians. From Hoogdele, successive moves were made to Lichtervelde, Meulebeke, and to Denterwhem. On the night of October 29-30, about 3 km. (1.8 miles) of the front were taken over along the Coutrai—Ghent railroad, just across the Lys River, with Olsene in front.¹⁷

On October 31 an attack was launched. The enemy was forced back, and that night the line rested on the crest of Cruyshautem heights. On November 1 the division advanced and established its line on the west bank of the Scheldt River, and on November 2 and 3 the river was crossed and a line established on the east bank, in the face of stubborn opposition.¹⁷

The division was relieved on the night of November 4-5, and it retired to the Thielt area. On November 9 it moved up again. Another crossing of the river, this time between the villages of Asper and Heuvel, about 15 km. (9.3 miles) from Ghent, was the task assigned the 37th; the crossing was effected on the 10th, and on the 11th the eastern bank was securely held. The advance continued until 11 a. m., at which time troops had reached Dickele, Zwartebroek, Bouchaute Farm, and the crossroads about 800 meters (872 yards) southwest of Keerkem.¹⁷

MEDICAL DEPARTMENT ACTIVITIES

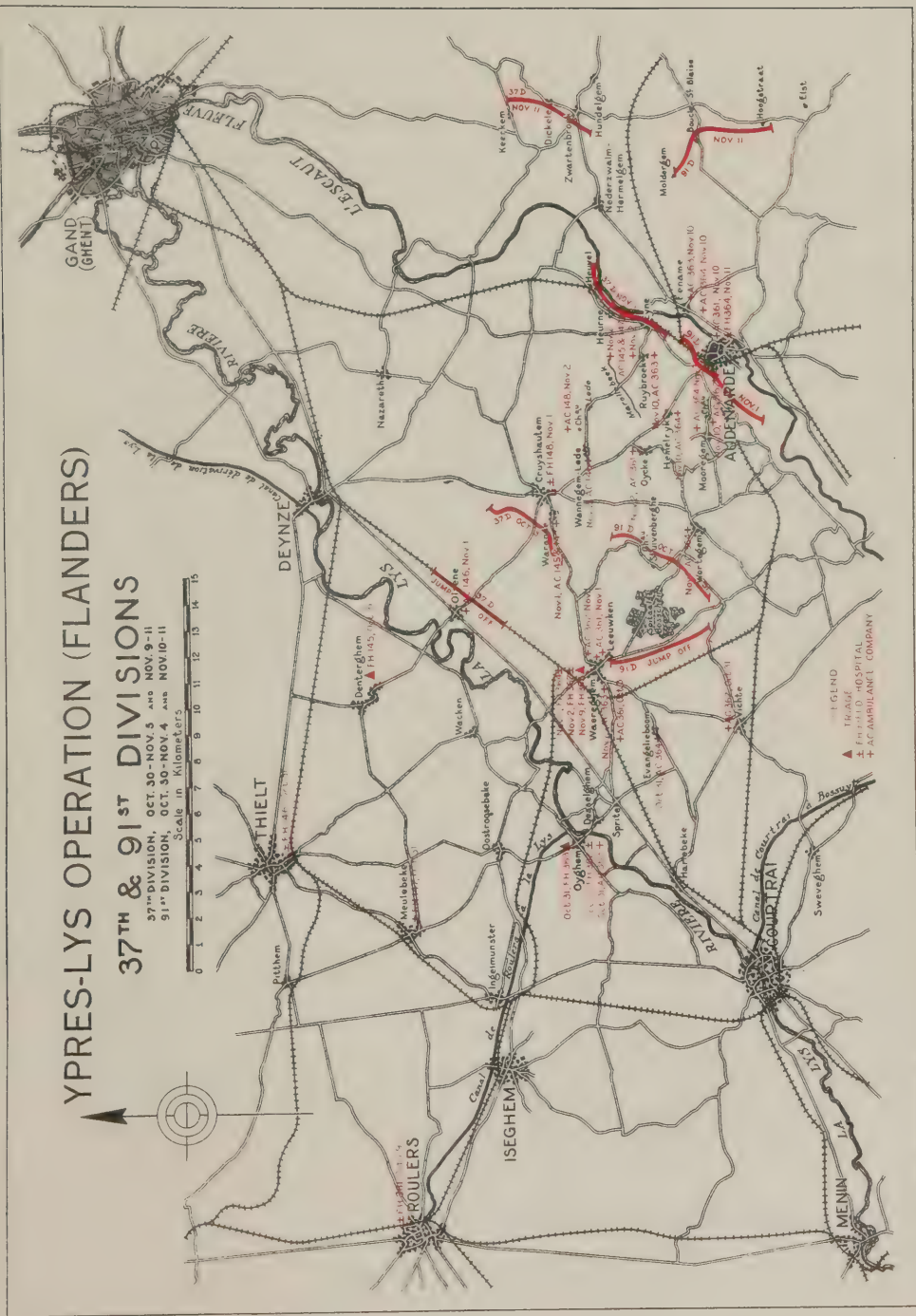
During the attack of October 31, Ambulance Companies No. 145 and No. 147 were combined and opened a dressing station 1 km. (0.6 mile) east of the Lys, covering the southern half of the divisional sector, while Ambulance Company No. 148 rendered a similar service for the northern half. The next day a station was opened in Olsene by Ambulance Company No. 146 and the station of the Ambulance Companies No. 145 and No. 147 was advanced 10 km. (6.2 miles) to Warande. During the night, contact with the advance element was lost, and the day was spent in clearing the large area covered by the advance. This was no small task, for each farmhouse sheltered some wounded, including allies, civilians, and Germans. The next day this station again

YPRES-LYS OPERATION (FLANDERS)

37TH & 91ST DIVISIONS

37TH DIVISION, OCT. 30-NOV. 5 AND NOV. 9-11
91ST DIVISION, OCT. 30-NOV. 4 AND NOV. 10-11

Scale in Kilometers
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



Battle lines, taken from existing orders and maps, are approximate.

advanced to Ruybroek, 1.5 km. (0.9 mile) from the Escaut, but as this position was found to be too exposed it was replaced by a small advanced station, while the main station returned to the Marollebeek, a small creek paralleling the Escaut, 3 km. (1.8 miles) from the firing line.¹⁸ From this time then two stations served the southern half of the sector, sending their litter bearers forward in advance of the regimental detachments, and bringing in wounded from beyond the river. The main station in this sector remained open until after the division was relieved. Meanwhile Ambulance Company No. 148 had opened a sorting and distributing station on the line of the axis of liaison at Wannegem-Lede. All these stations were frequently under fire, for the terrain was very flat and no shelter was obtainable.¹⁹

Field Hospital No. 145, operating the triage, was located at Denterghem, 3 km. (1.8 miles) from the line, Field Hospital No. 47 receiving surgical cases at Meulebeke and Field Hospital No. 146 at Thielt. Each of these latter was about 10 km. (6.2 miles) to the rear, and served in effect as way stations on the line of evacuation to Evacuation Hospital No. 5, at Staden, 40 km. (24.8 miles) from the front. Field Hospital No. 148, at first held in reserve at Denterghem, was advanced, October 31, to Cruyshautem, near the second objective of the attack. The coordination and rapidity of evacuation was such that within 24 hours after receipt of wounded, casualties other than non-transportables were either on a hospital train or awaiting its arrival.¹⁹

In the second phase of the division's activities, the triage was established at Thielt and the relatively few casualties which occurred during this operation were removed to that formation by the morning of November 11.¹⁸

THE 91ST DIVISION

On October 16 the 91st Division entrained for Belgium, and upon its arrival, on the 18th, was placed at the disposal of the army group of the King of the Belgians; it was assigned to the French Seventh Army Corps, French Sixth Army, on October 28. The division relieved the French 164th Division in line, on October 30, and participated in the Ypres-Lys operation October 30–November 11. During this operation, it took and held Spitaals—Bosschen, a strongly fortified wood, captured the town of Audenarde, and drove the enemy east of the Scheldt River. Commencing on the night of November 3–4, it was relieved by elements of the French 41st Division, and withdrew to the vicinity of Oostroosebeke, with headquarters at that place. On November 8 it passed from the French Seventh Army Corps to the French Thirtieth Army Corps, and entered the front line again on November 10, preparatory to the resumption of the attack and the crossing of the Scheldt.²⁰

MEDICAL DEPARTMENT ACTIVITIES

Until the division had crossed No Man's Land, Field Hospital No. 362, which had gone forward on October 15, was established at Boesinghe, near Ypres, evacuating to British Casualty Clearing Station No. 36, 3 km. (1.8

^c For map of activities of this division for this period, see Plate LII.

miles) northwest of Ypres, on the Ypres—Elverdinghe road. As the division moved eastward the other hospitals passed on to Roulers, one being established in Oostniewkerke for a few days.²¹

During the night of October 30–31, 41 G. M. C. ambulances arrived, having been brought by a detail of the 316th Sanitary Train from Marseille, and the next day, United States Army Ambulance Service Section No. 640, with its 20 Ford ambulances, was relieved from duty with the division. Evacuation from the field hospitals to Evacuation Hospital No. 5, at Staden, was effected by 15 ambulances belonging to the division, supplemented during the last 24 hours in this sector by 5 ambulances from an evacuation ambulance company. During the entire advance evacuation was performed expeditiously, for roads were numerous, not so much congested, nor in such bad condition as in the Meuse-Argonne area, and ambulances habitually brought wounded from the battalion aid stations. All these vehicles were operated from an ambulance head located in the vicinity of the division post control. Bearers from the ambulance companies worked in advance of the regimental stations, bringing wounded to these points.²² On October 31 a detachment of Ambulance Company No. 361 crossed the Lys and established a dressing station on the Sprite—Waereghem road, near a railway crossing. The same date Ambulance Company No. 364 was held in reserve at Oyghem, and the ambulance park was established at Desselghem. Evacuations were made to Field Hospital No. 363, located north of Oyghem, which was supplied with triage and degassing equipment.²³ Field Hospital No. 362, for surgical cases, was also located here, while Field Hospital No. 361 was operating in a convent at Roulers. Because of the distance to the evacuation hospitals, it was necessary to perform much more surgical work in divisional units than had been the practice heretofore.²⁴

On November 1, Ambulance Company No. 361 established a station at Waereghem, which moved a few hours later to Leeuwken. Ambulance Companies No. 362 and No. 364 advanced their stations to Wortegem, the ambulance park was established at the crossroads near Chateau Stuivenberghe and Ambulance Company No. 363 was held in reserve at Oyghem. The following day the dressing station of Ambulance Company No. 364 moved to a point near Vondelken and that of Ambulance Company No. 361 to Oycke, the latter sending forward that night to Audenarde personnel for an advance station which was withdrawn November 4. Ambulance Company No. 363, as yet in reserve, moved to Waereghem, where the field hospitals were established, then 6 km. (3.7 miles) from the front line, early on the afternoon of the 2d. On the 3d, Ambulance Company No. 364 established a temporary advanced station staffed by 1 noncommissioned officer and 4 privates, in the neighborhood of Chateau de Mooregem, but in the afternoon the three companies (Nos. 361, 362, and 364) operating stations withdrew all their personnel, except 1 noncommissioned officer and 15 other enlisted men from each company, to Waereghem. These detachments continued to operate the dressing stations until the next day, when the ambulance company section was withdrawn to Oostroossebeke.²⁵

Before the division reentered the lines a bathing and disinfecting plant in Oostroosebeke constructed by the Germans was put in repair and as many men as possible were passed through it. November 9 the ambulance section and Field Hospital No. 363 moved to Waereghem. On the 10th, Ambulance Company No. 362 established its station at Chateau Mooregem, Ambulance Company No. 363 at Ruybroek, and advanced during the day across the Scheldt River, Ambulance Company No. 364 at Hemelryk. All of those stations, accompanied by ambulances, were advanced during the day across the Scheldt River, Ambulance Company No. 362 to Audenarde, Ambulance Company No. 363 to Eename, and Ambulance Company No. 364 to a location midway between the former two. Patients from east of the Scheldt were evacuated to the station of Ambulance Company No. 362, and thence carried by litter across a footbridge to a station operated by Ambulance Company No. 361. Here they were again placed in ambulances and sent to Field Hospital No. 363, at Waereghem. The next day these sanitary formations occupied the same sites as formerly, but evacuations from dressing stations were made directly by motor ambulance over the bridge at Audenarde to Field Hospital No. 364 which had been located at that point.⁶²

MEDICAL DEPARTMENT SERVICE IN REAR OF THE 37TH AND 91ST DIVISIONS

On the morning of October 24 Evacuation Hospital No. 5 reached Staden, Belgium, where it set up its plant in the vicinity of a French hospital close to the railroad on the outskirts of what remained of the town. Establishment was completed before casualties began to arrive, and assistance was rendered neighboring field units of the Medical Department in erecting their formations. Most of the evacuations, too, were made by divisional ambulances, at times over a distance of 45 km. (27.9 miles). The unit here admitted from the 37th and 91st Divisions and Artillery of the 28th Division, 62 gassed patients, 2,161 medical, 1,695 surgical; total of 3,918, among whom occurred 103 deaths. At one time, because of interruption in hospital train service, the hospital was accommodating 1,420 patients, but was able to evacuate 1,020 the following day. The unit remained at this station until December 9, when it moved to Dunkirk, in the service of the 37th Division.¹⁰

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SECTION VI

AMERICAN EXPEDITIONARY FORCES WITH THE BRITISH

CHAPTER XXXVII

SECOND CORPS

On January 10, 1918, the British requested that American battalions be brought over to France for service in British divisions. England agreed not only to furnish supplies for these troops, but also to undertake to provide sufficient commercial shipping to assure the transport of the American battalions to France, without interference with our own program. The condition was that these American battalions serve in British divisions for a minimum period of four or five months. It was agreed, however, that the period of training with the British cover a period of about 10 weeks. For purposes of supervising the demonstration and training of the divisions involved, the Second Corps staff was created on March 19, 1918, without, at first, a commanding general.^{1, 2}

Several months passed before the arrival of the divisions, during which time the corps headquarters staff made all necessary preliminary arrangements for their reception, assignment to training areas, their training, billeting, etc. In the late spring of 1918, the designated divisions, less Artillery, began to arrive and continued to do so throughout the summer, the Infantry of the following divisions constituting, at one time or another, the Second Corps: 77th, 35th, 28th, 4th, 82d, 33d, 30th, 78th, 27th, and 80th.^{3, 1}

On arrival in France, the Artillery and part of the personnel of the sanitary trains of these divisions were diverted to various points with the American Expeditionary Forces other than in the British area. Each of the divisions in the Second Corps was assigned to a section back of the British front, and immediately began a course of training, preparatory to taking its place in line.⁴

About the middle of August, the 33d, 78th, and 80th Divisions, which had belonged to the Second Corps, and were in training in various localities on the British front, were withdrawn, leaving with the corps the 27th and 30th Divisions, which were attached to the British Second Army in Flanders. These two divisions, having completed their phase "B" training, as set forth in the program of training for American divisions serving with the British, were put in the line as divisions; the 30th on August 19, with the British Second Corps, and the 27th, on August 23, with the British Nineteenth Corps. The 30th Division was on the right of the Second Corps and the 27th on the left of the Nineteenth Corps, and the two divisions were side by side in what were known as the Canal and Dickebush sectors.⁴

Arrangements were made between our Second Corps headquarters and the headquarters of the British Second Army, whereby a new corps sector was to be formed out of the two above-named sectors, to be taken over by the Second Corps. The necessary divisional Artillery and corps troops were turned over by the British, and all the orders were issued for the passing of the command at 6 p. m. on August 30, 1918. However, at 5 p. m. on that date orders were received from British general headquarters withdrawing the Second Corps from the British Second Army, and placing it in British general headquarters reserve, in the vicinity of Doullens. Consequently, although the two divisions functioned as such in the line for about two weeks and took part in the operation in which the enemy lost Mount Kemmel and the high ground in its vicinity, the corps did not actually function in active operations in the British Second Army.⁴

From September 3 to September 22 the Second Corps formed part of the British general headquarters reserve. It occupied training areas in the vicinity of Doullens, with corps headquarters at Beauval. While here information was received from British general headquarters that the corps would be used later in operations then in contemplation, and the prescribed program of training was entered upon with this end in view.⁴

On September 20 the Second Corps was released from general headquarters reserve and was transferred to the British Fourth Army, with a view to its employment in contemplated operations against the Hindenburg line east of Peronne. The movement took place during the period of September 22-24.⁴

On the night of September 23-24 the 30th Division relieved the Australian 1st Division, in the line west of Bellicourt, taking over what was known as the Nauroy sector, a front of approximately 3.3 km. (2.1 miles). In the sector taken over by the 30th Division, the British had, during recent operations, captured most of the advanced trench system which ran about 910 meters (1,000 yards) west of the main Hindenburg line. The front line of the division, accordingly, occupied approximately what had been known as the Hindenburg outpost line. The division was disposed with the 59th Brigade holding the sector and the 60th Brigade in divisional reserve.⁴

On the night of September 24-25 the 27th Division relieved the British 18th and 74th Divisions in the line, taking over what was known as the Gouy sector, a front of approximately 4 km. (2.5 miles), connecting with the 30th Division on its right. On this front the British divisions had never succeeded in gaining the advanced defenses of the Hindenburg system. These defenses were particularly strong and comprised three very troublesome strong points, known as the Knoll, Quennemont farm, and Guillemont farm. The front line of the 27th Division occupied approximately the old British front-line trenches, which was very close to the Hindenburg outpost line. The line was taken over by the 53d Brigade; the 54th Brigade was held in divisional reserve.⁴

Opposite the sector occupied by the corps, the country was gently rolling and open, with a fairly well-defined ridge running from near Vendhuile at the northern limit of the sector, to Bellicourt, near the southern limit. This ridge roughly paralleled our front line at a distance of 1.76 km. (1.1 miles).

Through it, longitudinally, the Cambrai—St. Quentin canal passed, by means of a deep tunnel, generally known as the Bellicourt tunnel. The main Hindenburg line, consisting of a complicated system of trenches, heavily wired, ran along this ridge, 182 to 364 meters (200 to 400 yards) west of the tunnel, which passed under the eastern slope of the ridge. The tunnel added tremendously to the natural strength of the position.⁴

To break this strong portion of the German line, it was necessary to utilize every available means of inflicting loss on the enemy and of breaking up his defensive arrangements. In order that the attack might be carried on by fresh troops, after the line had once been penetrated, the Australian corps was affiliated with the Second Corps, for the attack. The Second Corps, having no American artillery assigned to it, the entire operation was supported by British and Australian artillery.⁴

The plan of the corps attack was, briefly, to carry the bridges of the canal, if possible, and to gain objectives on the east thereof. As soon as the 30th and 27th Divisions had reached their objectives, the Australian 5th Division, on the right, and the Australian 3d Division on the left, were to pass through the 30th and 27th Divisions, respectively, and to continue the advance to a line which included the towns of Beaurevoir and Wiancourt.⁴

The main attack was to be preceded by a preliminary operation for the purpose of advancing the line of departure to the outpost line of the Hindenburg defenses. The 30th Division, upon its entry into line, had partially occupied the outpost position, but the 27th Division was still to the west of it.⁵

The objective was the rearmost trench of the Hindenburg outpost line, to gain which would require an advance of about 1,100 yards from the line already occupied by the 27th Division.⁵

The advance started at 5.30 a. m. September 27. There was hard fighting, which lasted all day. The Infantry seemed to have advanced in places to the objective, but the strong points at the Knoll and Guillemont and Quennemont farms were not taken, and German counterattacks forced the withdrawal of those fragments that had reached the objective, except on the extreme right, where groups held on and were connected with the left flank of the 30th Division. The fighting died down during the afternoon and evening, and during the night the 27th Division front line was established at approximately the position it occupied prior to September 27.⁵

In preparation for the main operation, each division, on the night of September 27–28, relieved the brigade in line by the brigade which had been in reserve.⁴ The main attack started at 5.50 a. m. September 29. The morning was very foggy. This fog, mixed with the smoke of the barrage, made it extremely difficult to see more than a few feet in any direction. Almost from the start, the Infantry and tanks experienced great difficulty in maintaining direction and contact. In the right division sector of the Second Corps, the advance was made against heavy resistance, without serious mishap. On the afternoon of September 29, the 30th Division, being approximately on its objective, the Australian 5th Division passed through it, as had been planned. At this

time, the 117th Infantry, on the right, was approximately on its objective, facing southeast, and in touch with the British 46th Division, to the right. The 120th Infantry was in Nauroy. In the left division sector, grave difficulties were encountered from the start. Apparently expecting the attack in this sector, the enemy pushed out strong parties through the underground passages, communication trenches, and ravines, and succeeded in getting considerable forces on our side of the barrage line. The advance was opposed by heavy machine-gun fire along the whole front. The right of the line in this sector succeeded in getting forward to the edge of Bony, in the main Hindenburg line. Along other parts of the line elements pressed forward, in spite of the heavy opposition, and detached groups reached their objectives at various points throughout its extent. Quennemont farm and various other strong points held out. Elements which had passed through the main point of resistance thus found themselves between two fires. The Australian 3d Division, which had been designated to pass through the 27th Division, assisted and supported that division through the latter part of the advance.⁴

From October 1 to 5 the Australian corps improved the position obtained as the result of the attack on the Hindenburg line, and advanced to a line running from Montbrehain northwest to Beaurevoir. On the night of October 5-6 the Second Corps relieved the Australian corps, which was then withdrawn to a back area, and the command of the corps sector passed to the commanding general, American Second Corps, at 9 a. m., October 6.⁴

On October 8, at 5.15 a. m., an attack was launched along the entire army front, with the object, as far as concerned the Second Corps, of capturing Brancourt and Premont and advancing the line a distance of about 5.5 km. (3.44 miles).⁴ The 30th Division attacked; the 27th Division was corps reserve.

The fighting was severe, but the normal objective was gained by 10 a. m. and the contingent objective by evening. The progress of the British divisions on the flanks was slower than that of the 30th, whose task thus was rendered more difficult by flank fire.⁵

The success of the day's work may be ascribed in part to the fact that the Germans had already decided upon a general retreat on this front and were fighting merely a rear-guard action.⁵

On October 9, at 5.20 a. m., the attack was resumed, and in the afternoon the towns of Busigny and Becquigny were captured.⁴

On October 10, at 5.30 a. m., the attack began again, to secure the Selle River and the high ground beyond. The country at this point was thickly scattered with villages, farms, and woods, and the enemy took full advantage by its very effective use of machine guns. The 119th Infantry, however, captured Escaufort and St. Souplet, and with the British, St. Benin, in the face of heavy fire.⁴ The 120th Infantry took Vaux-Andigny, but the British Ninth Corps on its right got only as far as the west edge of the Bois de Riquerval. The 120th, being then exposed to fire from the south and south-east, was compelled to refuse its right along the railway south of Vaux, and was unable to reach its objective, the village of Molain and the Selle River.⁵

On the following day the attack proceeded. Stubborn resistance was still encountered, as during the day before, but on the right, the town of La Haie Menneresse was taken by assault, and the line advanced there about 910 meters (1,000 yards). The left sector remained stationary. On the night of October 11-12 the 30th Division, which had been continuously attacking since October 7, and had advanced over 13.6 km. (8.5 miles) on a 6.3-km. (3.9-mile) front, was relieved by the 27th Division. The 30th Division was withdrawn to the vicinity of Premont and Butry Wood, where it remained in support for five days.⁴

On the night of October 15-16 the 30th Division took over the right half of the sector from the 27th Division,⁴ on a line that was practically the same as that turned over by it five days earlier. These five days had been utilized by the corps in consolidating the strength of captured territory, over which it had advanced, and in preparing for the next attack, which was scheduled by the British Fourth Army to open on October 17.⁴

On October 17 the British Fourth Army attacked along its whole front. The Second Corps attacked with the 27th and 30th Divisions in line, the attack beginning at 5.20 a. m. Vigorous resistance, assisted by the natural defenses of the terrain, was met from the start. Part of the line of departure of the 27th Division ran through the partly destroyed village of St. Souplet, where even unimpeded progress would have been slow. The attacking troops, therefore, fell behind their barrage and suffered for lack of its assistance in clearing the machine-gun nest on the ridge just beyond. A thick fog made observation very poor during the morning. When the advance regiments of the 27th Division reached the line just west of Le Cateau—Arbre Guernon road, they were too far in front of both flank divisions to permit continuing on until these came up. Consequently the division halted on this line. After capturing the villages of St. Martin Riviere and Molain, the progress of the 30th Division was very slow. The task of the 30th Division was made particularly difficult due to the necessity of forming a defensive flank to maintain touch with the British division on its right, which was experiencing the same difficulty still farther to its right. As a result of the day's fighting, the line was advanced 3.6 km. (2.2 miles).⁴

On the 18th a late start was made because of the necessity of maintaining contact with the divisions on the right. The terrain was especially difficult, containing the strong positions of Ribeaupville, Ecaillon, and Mazinghien. The first two of these towns were captured before nightfall; and after an advance of about 1.3 km. (1,500 yards), halted in a position encircling the town of Mazinghien. On the morning of October 19 the 30th Division made a determined attack at 5.30 a. m., and took the town of Mazinghien by assault, pressing vigorously on to La Haie Tonnoile farm, a distance of nearly 2.7 km. (2.1 miles). The objective for this day's attack was the high ground overlooking Sambre a l'Oise canal, and by night the west slope of this ridge had been reached all along the divisional front.⁴

Meanwhile the 27th Division had pushed out strong patrols, behind which the line advanced slowly to the next ridge. Here the strong point of

Jonquieres was captured at 10 a. m., giving the 27th Division complete command of the high ground, while patrols advanced across the St. Maurice River. The ridge beyond, behind which lay Le Catillon, was strongly fortified by machine guns. This was the situation by nightfall, October 19. The commanding ground overlooking Catillon and the Sambre canal had been reached and a pause on this part of the front was ordered, pending movements on other parts. Both the 27th and 30th Divisions had been strongly attacking, with but little rest, since September 29. Their losses had been heavy, and no replacements had been received. The army commander therefore gave instructions for the withdrawal of the corps for a period of rest, refitting, and assimilating of replacements which were then en route. This period was to last from two to three weeks. The 30th Division was relieved on the night of October 19-20, and the 27th Division on the night of October 20-21, the corps sector being taken over by the British Ninth and Thirteenth Corps.⁴

MEDICAL DEPARTMENT ACTIVITIES

Upon the arrival of each division surgeon in the corps area, the corps surgeon immediately met him and gave him the training schedule which previously had been prepared. Arrangements had already been made with the director general, medical services, British Expeditionary Forces in France, for the assignment of an officer of the Royal Army Medical Corps to the staff of each American division, as liaison officer, and when the divisions arrived, these officers reported and subsequently assisted in many ways.⁵

The corps surgeon had the following officers on his staff: One consultant in surgery, one consultant in medicine, and an assistant in charge of clerical work and the office force.⁵

Complete records were kept of the medical, dental, and veterinary officers, with a station list. Frequent reports of venereal diseases and sick and wounded reports were required, and copies of correspondence originating in and passing through the corps surgeon's office were filed. In addition, reports and returns were required by the chief surgeon, American Expeditionary Forces, as well as certain reports and returns to the director general, medical services, British Expeditionary Forces in England. The latter were simple in nature and few in number.⁵

After the arrival in France of the divisions constituting the Second Corps, the first and most important duty of the corps surgeon was completion of the training of divisional medical officers and of the enlisted men of the sanitary units and detachments. The program of training for American divisions serving with the British, issued by General Headquarters, American Expeditionary Forces, was strictly adhered to. Prior to the arrival of the 77th Division, the first division to report to the Second corps, preliminary arrangements had been made, after a conference with the director general, medical services, British Expeditionary Forces. These included the detail of British officers to the divisions which have been mentioned, and provision was made that two British field ambulances be assigned to each division, especially for training purposes, but also to be used in caring for and transporting sick and

wounded during the training period. These replaced the division stationary trains which were diverted elsewhere.⁵

During the summer of 1918 the Medical Department of the Second Corps entered energetically into work intended to render its personnel thoroughly familiar with conditions on the British section of the Western Front. This, the final stage of their training, consisted of daily drills; demonstrations of sanitary arrangements in the field and in the trenches; frequent conferences of division medical officers; "talks" by experienced American and British medical officers concerning the various problems confronting sanitary troops on the Western Front. The lectures and practical demonstrations covered especially prevailing diseases and their prevention, including trench fever and trench foot, the application of splints, treatment of gassed cases, methods employed for transporting the wounded, and selection and operation of lines of evacuation, treatment of water for drinking purposes, and kindred subjects. This course was followed by visits to the front, both by medical officers and enlisted men. British and American officers and men worked in perfect harmony to secure the best possible results from the training and to complete it at as early a date as possible. At this time, the duties of the corps surgeon consisted mainly of frequent visits to divisional areas, general supervision of sanitary conditions, conferences with the division medical officers, and oversight of the records and reports required.⁵

Upon arrival of an American division in the British area, all our Medical Department material and equipment, except the personal equipment of officers and men, was turned in for storage, and British equipment and medical supplies were issued in its stead. These supplies were obtained from the nearest British field medical supply depot, on requisition approved by the division surgeon.⁵

All Medical Department transportation was also furnished by the British. In some instances, this transportation, especially the motor ambulances, was found to be old, worn, and unserviceable, as most of it had been in constant use for a long time. During the training period, however, it answered the purpose.⁵

Some complaint was made by the personnel of American divisions, soon after their arrival, concerning rations furnished by the British. In point of fact, complaints were due probably to the change from living in well-constructed cantonments in the United States, where there were excellent cooking arrangements and a generous ration, to field conditions and a ration figured down to the lowest point to meet actual requirements. After becoming adjusted to the new conditions and having coffee substituted for tea (which was at first furnished by the British) no further complaints were received, and the men showed by their appearance that the ration supply was ample and suitable.⁵

THE 27TH DIVISION

During June, 1918, the 27th Division (less Artillery and most of its train), was attached for training to British troops in Belgium. On July 9, after

having been attached to the British Nineteenth Corps, the division was assigned to the defense of the east Poperinghe line, the second line of defense in the Dickebush and Scherpenberg sectors, on a front of approximately 3.6 km. (2.2 miles). At that time, enemy forces operating in Flanders comprised a group of armies which it was known were to attack to the north part of the Lys salient, in the vicinity of Mount Kemmel, for the purpose of driving through to the sea, gaining the channel ports, and cutting the allied army in two.⁶

The position of the division was under direct observation from Mount Kemmel, and casualties were caused almost daily by enemy shell fire. While holding the line, troops of the division continued the training required by General Headquarters, American Expeditionary Forces. The division was assigned to the American Second Corps, but at this time the only control exercised by the Second Corps was in training and instruction.⁶

On August 23 the division relieved the British 6th Division in the front line of the Dickebush sector, on a front of 3.1 km. (1.9 miles) at Dickebush Lake. From here, on August 31, the division attacked in the Ypres-Lys operation, and on that date and the following two days advanced its line about 1.8 km. (1.1 miles).⁶

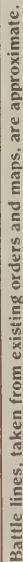
On the night of September 2-3 the division turned over its new line to the British 41st Division, and on the 3d it moved to the Winnezele area. It was transferred from the British Second Army to the British Third Army; and on September 4-5 entrained for an area near Doullens. On September 4 division headquarters was established at Beauquesne, and the division was billeted for training in the surrounding area, being transferred from the British Third Army to British General Headquarters reserve. Here the division remained until September 22.⁷

On September 23-24 the division moved by rail and by road from the Beauquesne training area to the vicinity of Tincourt, having been transferred from the British General Headquarters reserve to the British Fourth Army. On the night of September 24-25 it relieved the British 18th and 74th Divisions in the front line. The line taken over ran generally north and south on the east of Ronssoy, and extended from the vicinity of Le Tombois farm to Malakoff farm. The support line was approximately a north and south line through the eastern outskirts of Ronssoy.⁷

The line taken over faced, at about 910 meters (1,000 yards), the outer defenses of the main Hindenburg system, to the west of Bellicourt tunnel, the division holding a 4-km. (2.5-mile) front.⁷

The enemy held several strong points and outposts close to our line and had repulsed previous attempts to take them. The main features of this outer line were its strong positions situated on the high ground opposite the division's right sector and left, called, respectively, Quennemont farm, Guillemont farm, and the Knoll. From this outer line the terrain sloped down toward the main Hindenburg line, about 1.3 km. (1,500 yards) to the east, rising again at Bony, which was included in the enemy defensive system.⁷

Scale in Kilometers



An attack on the main Hindenburg line being contemplated, it was decided by the commander of the British Fourth Army that a preliminary operation was necessary in order to occupy the outer line of defenses, including the Knoll, and Guillemont and Quennemont farms, from which to launch the main attack. The line taken over by the 30th Division on the right was farther advanced than was that of the 27th, and included much of the outer lines of defenses. The line held by the British 12th Division on the left dropped back in a northwesterly direction, giving the 27th little support, and leaving Vendhuile (strongly occupied) free to threaten the left of any advance made by the 27th.⁷

On September 27 the division, 53d Brigade in line, attacked in the preliminary operation, its objective being the rearmost trenches of the outer line of the Hindenburg system, at a distance of about 1 km. (1,100 yards) from the line occupied by our troops. Throughout the day there were attacks and counterattacks, and on the night of September 27-28, when the 54th Brigade relieved the 53d Brigade, in the front line, the position taken over was practically the old front line held previous to September 27.⁷

On September 28 preparations were made for the main attack to take place on the following day. On the 29th, the 54th Brigade advanced. On the extreme left, opposition was met with from the start, the enemy holding outposts quite close to our line. The right regiment advanced during the day, an average depth of about 2 km. (1.2 miles). On the left, the troops advanced to a position on a line just east of the Knoll. The division line, on the evening of September 29, was approximately as follows: From the Knoll south to the west of Guillemont farm, thence southeastwardly to the Hindenburg line, and along this line to the division limits.⁷

On September 30 the troops of the division in the rear line remained in support during the day in the same position as that occupied on the evening of September 29. Under an arrangement with the Australian 3d Division, which had taken over the front line on the night of September 29-30, those portions of the 27th Division which were on the front lines moved forward with the Australian division and continued the attack during the 30th, completing the capture of the Hindenburg line in the right regimental sector, capturing the Hindenburg line in the left regimental sector, and capturing Bony, the possession of which place was not completely gained until the following day.⁷

Upon its relief from the lines, the 27th Division moved to the Peronne area. On the night of October 11-12 the 54th Infantry Brigade relieved units of the 30th Division in the front line. The 53d Infantry Brigade moved up, in support, to camps west and northwest of Busigny. The line taken over from the 30th Division was about 7,800 meters (8,500 yards) long, on the west bank of the Selle, extending from the village of St. Benin on the north to the south of St. Souplet, thence extending westward somewhat to and around the eastern outskirts of Vaux-Andigny. On the night of October 14-15 the division front was reduced to about 7.7 km. (4.7 miles), the British 6th Division taking over a portion of the line on the south, and the British 50th

Division a portion of the line on the north. Preparatory to an offensive operation to commence on October 17 this line was still further reduced on the night of October 15-16, the 30th Division taking over that portion which extended southwardly from just north of St. Martin—Riviere. The 53d Infantry Brigade relieved the 54th Infantry Brigade on the southern part of the division sector. This placed the Infantry brigades of the division on the front side by side, each holding a frontage of about 1,820 meters (2,000 yards). The enemy was holding a line on the east bank of the Selle River as far south as St. Souplet.^{6, 7, 8}

On October 17 the division, as a part of the American Second Corps, and in connection with the general British advance, attacked in the direction of Catillon. There was a very heavy fog in the morning of the attack, and this, combined with the smoke from the barrage, rendered it impossible to see except for very short distances. The advance was difficult from the start, both on account of the difficulty of observation and the terrain, which had to be covered immediately troops moved forward. The village of Arbre de Guise (Guernon), Advantage farm, the line of the main highway, Joneq de Mer ridge, Baudival farm, and many points along the ridges and railway embankments were found to be strongly held by the enemy with machine-gun nests and infantry. At nightfall, the left of the line was approximately along the ridge 227 meters (250 yards) west of Le Cateau—Wassigny road. In the right brigade sector the line was continued forward which reached the road north of Advantage farm, and passed along to and around the eastern outskirts of Arbre de Guise to the boundary of the divisional sector, where it connected up with the 30th Division.^{7, 8}

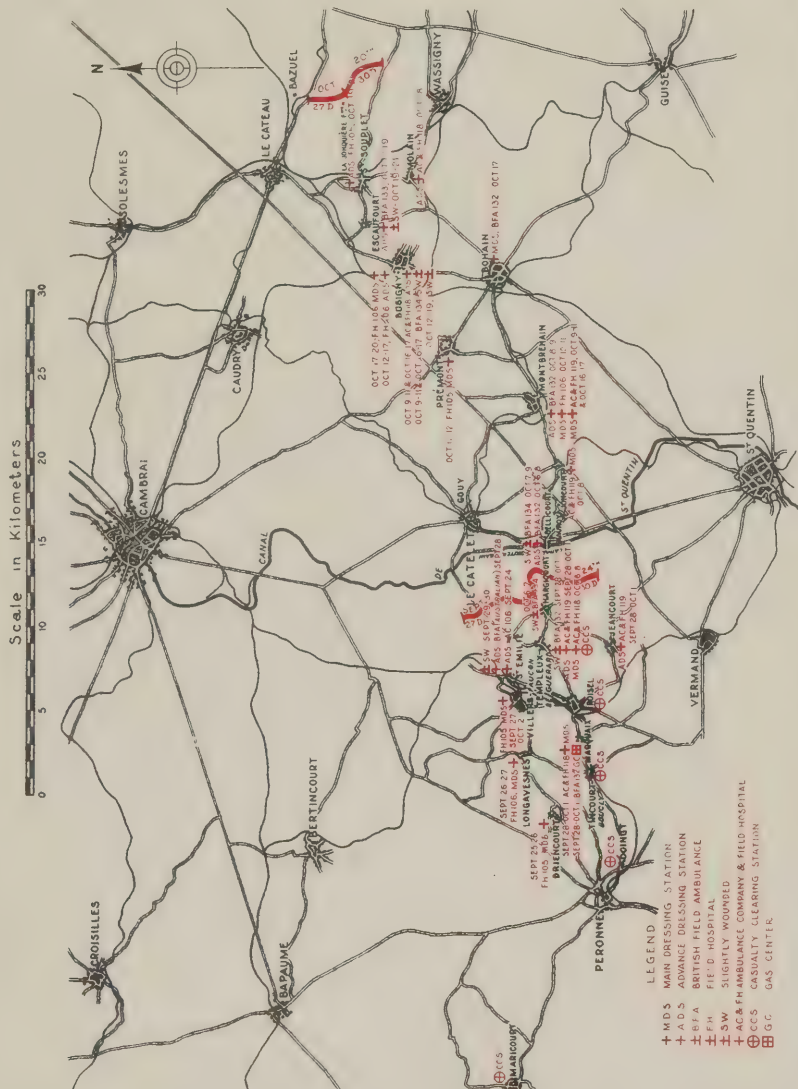
On October 18 the troops advanced at 5.30 a. m. In the right brigade sector the troops met with enemy machine-gun fire from many hedges along the ridge about 455 meters (500 yards) east of the departure line, and enfilade fire from the sector of the division on the right. This delayed the attack on the right, but in the afternoon the line was advanced to the ridge east of Arbre de Guise. In the left brigade sector no serious resistance was encountered until the line Joneq de Mer farm—La Roue farm was reached.⁷

During the night October 18-19 the line moved forward across the Joneq de Mer valley and seized the river west of the St. Maurice valley with very little resistance except from La Jonquiere farm, and because of it, the troops entrenched on the eastern crest of the Jonquiere farm ridge, where it remained in position during October 20. On the latter date arrangements were made for the relief of the division, and on the night of October 20-21 the British 6th Division marched in and relieved the 27th, after which the 27th Division moved to the vicinity of St. Souplet and Busigny. During October 21, 22, 23 the division marched back to the Roisel and Tincourt areas, where, on October 23-24, the troops entrained for the Corbie area.⁷

MEDICAL DEPARTMENT ACTIVITIES

While the division was encamped in the Somme area, it turned in all medical property not carried by the personnel individually, and gradually re-

SOMME OFFENSIVE
27TH & 30TH DIVISIONS



Battle lines, taken from existing orders and maps, are approximate.

ceived corresponding British equipment in its stead. This included water carts, with sterilizing apparatus, in whose use attendants were instructed by the 2/2 East Lancashire Field Ambulance of the British 66th Division. In the British service the field ambulance comprised a field hospital and an ambulance company combined. The divisional medical service was soon reinforced by another British unit, viz, 2/1 East Lancashire Field Ambulance, and for instruction American medical officers were assigned to both these organizations. For the same purpose, British officers gave lectures daily to all medical officers of the 27th Division, and a few of the latter were assigned to field ambulances serving the battle line.⁹ During the time from July 9 to July 31 the 2/2 East Lancashire Field Ambulance established a main dressing station (equivalent to our field hospital) at Trappistes Ferme and a smaller collection station at Oudezeele, and collected all the sick and wounded from this area, transporting the mild cases to the division rest station operated by the 2/1 East Lancashire Field Ambulance at Arneke and more serious ones to casualty clearing station, Canadian No. 2, and ambulance clearing station, Australian No. 1, at Esquelbeck. These organizations were British analogues of our evacuation hospitals.¹⁰ The division was under shell fire here, and a number of battle casualties occurred. On July 31 Field Hospitals No. 105 and No. 106 and Ambulance Company No. 106 of the 102d Sanitary Train joined the division, the first of the divisional medical units to rejoin in France. Field Hospital No. 105 was stationed at Oudezeele, Field Hospital No. 106 at Arneke, and Ambulance Company No. 106 at Trappistes Ferme.¹⁰

On August 20, in anticipation of occupation of a sector of the battle line by the 27th Division, the 2/2 East Lancashire Field Ambulance and Field Hospital No. 105 were ordered to take over the main dressing station at Remy siding, then operated by the 17th Field Ambulance, of the 6th British Division, while the 2/1 Field Ambulance, in the forward area, took over advance dressing stations at Long Barn (right flank) and at St. Dunstan (left flank). This relief was to be completed August 23-24.¹¹ The personnel of the latter unit was supplemented by Ambulance Companies No. 106 and No. 107, which had reported to the division August 22, and by the bearer section of 2/2 East Lancashire Field Ambulance. A collecting station for slightly wounded was organized at Burre barn, whence casualties were evacuated on a 1-meter railway to the main dressing station at Remy siding. At Trappistes Ferme, Field Hospital No. 106 operated a sick collecting post during the interval August 24 to September 3, receiving sick from all units not in the front line. It held the minor cases, but sent others to the casualty clearing stations at Esquelbeck.¹¹

The advance dressing station at Long Barn occupied shell-proof elephant shelters, reinforced with sandbags. This station received patients by hand or wheel stretcher carry from nine regimental and battalion aid posts and evacuated by motor ambulance to the main dressing station at Remy siding—a distance of 7 km. (4.3 miles). The total number treated at this post was 335 Americans and 89 British.¹¹

The advance dressing station at St. Dunstan occupied two reinforced elephant shelters and one dugout, all constructed in old buildings. The 221

patients received at this station from two battalion aid posts were evacuated over a 12-km. (7.1-mile) route to the main dressing station at Remy siding.¹²

On August 27 the entire medical, surgical, and ordnance equipment of the 2/1 and the 2/2 East Lancashire Field Ambulances were ordered by the Second British Army transferred to the 102d Sanitary Train, and the British organizations were relieved from the 27th Division.¹²

The transport so taken over by 102d Sanitary Train consisted of 4 Ford, 9 Daimler, and 6 horse-drawn ambulances; their condition was such that under constant use they were unable to stand the strain. By September 2 the ambulances frequently had to be sent to the shop for repairs, and at times only 7 or 8 of them were in commission. From August 24 to September 30 the sanitary train was reinforced by three ambulances from a neighboring British unit. During this period two ambulances were damaged by shell fire.¹²

After the relief of the 2/1 and 2/2 East Lancashire Field Ambulances the ambulance company personnel of the forward area consisted of 9 officers and 168 men of Ambulance Companies No. 106 and No. 107.¹²

The British 133d Field Ambulance, which reported for duty with the division on August 20, 1918, operated the divisional rest station at Arneke until, on September 1, it was relieved from this duty, then taking over the divisional rest station at Hilhoek from the British 16th Field Ambulance of the 6th Division.¹³

On August 31, on the advance of the 27th Division to York road, and on subsequent advances of September 1 and 2, the advanced dressing stations were held in their original positions at Long Barn and St. Dunstan, while advanced car posts were pushed up the Ouderdom-Vierstraat and Hallebast-Vijverhoek road. A car post was established behind a brick house in the outskirts of St. Hubert-Ushoek, some 364 meters (400 yards) from Hallebast Corners and about 1.8 km. (1.1 miles) from the advance dressing station. Ambulances were stationed here until a sufficient number of cases to warrant their removal were assembled at a collecting post established 1.2 km. (0.74 mile) forward, when a motor ambulance was speeded over the dangerous area to the collecting post. The American Red Cross was constantly in touch with the forward area, its division representative establishing a depot of supplies at the main dressing station at Remy siding and issuing to each battalion aid post a primus stove, cocoa, sugar, milk, cigarettes, tobacco, and extra blankets.¹³

On September 2 and 3 the sanitary train was relieved, and with the British Field Ambulance No. 133 marched to Proven, where all the organizations entrained for the Doullens area, arriving September 4. The 102d Sanitary Train, which now comprised Field Hospitals No. 105 and No. 106, and Ambulance Companies No. 106 and No. 107, was now billeted at Beauval, where the field hospitals established a division rest station for the sick returnable to duty within 14 days, sending the more serious cases to Casualty Clearing Station No. 21, several kilometers distant.¹⁴

While the division remained in this area, from September 4 to 22, its sanitary personnel participated further in intensive training. A problem

covering and simulating the proposed attack on the Hindenburg line was carried out, in which the entire division participated.¹⁴

On September 25 Field Hospital No. 105 relieved the field ambulance company of the British 74th Division, which had been conducting a main dressing station at Driencourt, and Field Hospital No. 106 established itself at Longavesnes, where it converted two wooden buildings into dressing rooms and erected marquee tents as wards.¹⁴ The next day, Field Hospital No. 105 closed and moved to Villers-Faucon, where it began to receive patients at noon on the 27th. The advance dressing station was established by Ambulance Company No. 106, on the night of September 24, in some old buildings and dugouts at St. Emilie, the forward area being covered by Ambulance Companies No. 106 and No. 107, reinforced by the litter-bearer section of the 133d British Field Ambulance and 100 men of the 108th Infantry. The motor transport consisted of 3 Ford and 11 Daimler ambulances.¹⁴ The personnel of the advance dressing station was taxed to the limit of its endurance, and on the morning of the 28th was reinforced by the Australian 11th Field Ambulance.¹⁵ From this location walking wounded were carried by trucks to the corps walking wounded rail post just east of Villers-Faucon. During the main attack commenced on the 29th the motor transportation was reinforced by 10 Red Cross ambulances and an advanced car post was established at Ronsoy, whence cars were sent up to the front on the Ronsoy—Lempire—Bellicourt roads. Motor ambulances evacuated the main dressing station to the casualty clearing station at Tincourt and Doigt.¹⁵ On October 2, when the division was relieved, the sanitary train and Field Ambulance No. 133 marched to Courcelles, where they rested until October 8.¹⁶

October 10, an advance party of Field Hospital No. 106 proceeded to Montbrehain to take over the main dressing station at this point from the American 30th Division. The next day when orders were received for the 27th Division to take over the line from the American 30th Division, Field Hospital No. 105 prepared the schoolhouse at Premont for use as a main dressing station, and Field Hospital No. 106 opened an advance dressing station at Busigny. These arrangements continued until the morning of the 18th of October, when the advance through St. Souplet occurred.¹⁶ Use of a field hospital to operate the advance dressing station was due to the experience, on September 27, at St. Emilie, where it had been learned that two ambulance companies were unable to spare sufficient personnel to operate such a formation during a period when a great many casualties were arriving. Employment of a field hospital as an advance dressing station was also advantageous because this could be used later as a main dressing station if the main dressing station from the rear was "leapfrogged" beyond it.¹⁷

Ambulance Companies No. 106 and No. 107, the litter-bearer section of the British 133d Field Ambulance, with the motor and horse ambulances, evacuated the forward area. Transportation was again augmented by a loan of 10 American Red Cross ambulances.¹⁷

At the beginning of the battle of La Selle River, on October 17, the main dressing station at Premont was closed, the advanced dressing station was

converted into a main dressing station, and the British 133d Field Ambulance opened an advance dressing station at Escaufourt, with the main car post at St. Souplet. This was later pushed across the river and railroad tracks to L'Arbre de Guise, and up to North Chimney and La Roue Ferme. On October 19 Field Hospital No. 105 opened an advance dressing station at St. Souplet, the British 133d Field Ambulance closing at Escaufourt.¹⁷

Evacuation of the forward area was effected promptly and completely each day by nightfall, as the nature of the terrain made it possible to push



FIG. 89.—Wounded from the 27th Division being carried to the rear, Busigny, Nord, October 17, 1918

Ford ambulances up close to the rear of the advancing troops. Evacuation from the main dressing station to the casualty clearing station was very difficult, because of the long distance and the condition of the roads. The round trip, owing to the rapid advance of troops and the delay in advancing rail-head and casualty clearing station, took from eight to nine hours. At first the convoy consisted of 40 ambulances from the British 37th Motor Ambulance Convoy, but upon the return of the American 30th Division, which took over half of the front line of the 27th Division on October 15-16, 20 ambulances were transferred to that organization. The ambulances remaining with the 27th Division proving inadequate, 22 were turned over to it by the corps and

army. This reinforcement was adequate promptly to evacuate all the division's casualties.¹⁷

The walking wounded were transported to the entraining point at Montbrehain, where a detail from Field Hospital No. 105 operated an entraining post. The division dental surgeon, with a detail from Field Hospital No. 105, operated a detraining point at Roisel whence the wounded were conducted across a badly torn-up field to waiting *char à bancs* for evacuation to the casualty clearing station at Roisel, 1.5 km. (0.9 mile) distant.¹⁸

After the 27th Division was relieved by the British 6th Division and ordered to Corbie, Field Hospitals No. 106 and No. 107, which had reported for duty October 25, opened a division rest station at Foulloy on October 26, and Field Hospital No. 105 opened a disinfecting and treatment station for scabies at Corbie. Field Hospital No. 108 had reported for duty with the division on October 15, but was held at Roisel until ordered to Corbie, October 24. Ambulance Companies No. 105 and No. 108 reported October 20, but were likewise held at Roisel until ordered to Corbie.¹⁸

THE 30TH DIVISION ^a

On July 2, 3, and 4, 1918, the 30th Division moved to Belgium, under the British Second Army. For further training, units were brigaded with British divisions in the canal sector southwest of Ypres, from July 16 to August 17. On August 17-18 the division took over the canal sector from the British, holding its position until August 30. During the period August 31 to September 2 the division participated in the Ypres-Lys operation in the battle before Mount Kemmel. In this operation the division captured all its objectives, including Lock No. 8, Lankhof farm, and the city of Voornezele, advancing 1,500 yards.^{19, 20}

On September 4-5 the division was withdrawn from the canal sector and was placed in British General Headquarters reserve, with division headquarters at Roellecourt, France. While in this area, the entire division was trained in attacking in conjunction with British tanks.¹⁹

On September 17 the division was again moved farther south, with division headquarters at Herissant; and on September 22 was moved to the British Fourth Army, with division headquarters at Bois de Buire, near Tincourt, taking over a front line sector from the Australian 1st Division on the night of September 23-24.¹⁹

On September 29 the division, with the American 27th Division on the left and the British 46th Division on the right, assaulted the Hindenburg line, which at this time curved in front of the subterranean canal south of Bellicourt. The Infantry started off well from the line of departure, but had not progressed more than a few hundred yards before they began to experience difficulty in maintaining direction and contact. During the remainder of the morning the attack was carried on by more or less mixed groups which had been picked up along the whole front. Small groups of men, acting on their own initiative, would clear out troublesome machine-gun nests, or complete

^a For map of activities of this division for this period, see Plate LIV.

the capture of any trench encountered. The troops on the right, having the enemy only in their direct front to contend with, were able to make steady progress toward their objective. Troops on the left early encountered machine-gun fire from the sector on their left and were soon forced to form a defensive flank in that direction. On the afternoon of the 29th, at the time the Australian 5th Division passed through the 30th Division, the 117th Infantry, on the right, was approximately on their objective, facing south-east and in touch with the 46th Division, on their right; the 120th Infantry was in Nauroy, elements having gone beyond there and reached their objective, but having been forced to return on account of being out of touch with units on their flanks; the regiment in general occupied Le Catelet—Nauroy line. The 119th Infantry had its right on the Le Catelet—Nauroy line, but had been forced to bend its line back to the tunnel because of fire from the sector on its left. When the Australian 5th Division passed through the line held by the 30th Division, they were joined and assisted by various groups from the different regiments of the 30th Division. These groups remained with the Australian division and were withdrawn during the night September 29–30.²⁰

On October 2, the division was moved back to the Herbecourt and Le Mesnil areas, presumably for rest and refitting. However, on October 5 it moved to the vicinity of Hargicourt and Templeux le Guerard, and on the night of October 5–6 its 59th Infantry Brigade relieved the Australian 5th Division in the line extending from Montbrehain northwest to near Beau-revoir.²⁰

A formal attack having been ordered by the American Second Corps for October 8, the division advanced on a front of approximately 3.6 km. (2.2 miles), with two objectives, the first about 3.6 km. (2.27 miles) distant, including the town of Brancourt; and the second, about 2.2 km. (1.3 miles) beyond the first objective, including the town of Premont. By the end of the day both these towns had been captured and the line lay east of Premont.²⁰

On October 9 the 59th Brigade attacked, its objective being about 4.5 km. (2.7 miles) distant. Having attained this, it was passed through during the afternoon by the 60th Brigade, whose objective was 1.8 km. (1.1 miles) beyond. This was attained on the afternoon of the same day.²⁰

On October 10 the attack was renewed, the objective now being the high ground to the east of the Selle River, from St. Benin to Molain, both villages inclusive. This necessitated an advance of from 5 to 6 km. (3.1 to 3.7 miles) over very difficult terrain, including villages, farms, and woods.²⁰ The 119th Infantry, by 12.50 p. m., had captured St. Souplet and St. Benin, the latter in conjunction with the British.

The 120th Infantry took Vaux Andigny, but the British Ninth Corps, on its right, got only as far as the west edge of the Bois de Riquerval. The 120th, being then exposed to fire from the south and southeast, was compelled to refuse its right along the railway south of Vaux, and was unable to reach its objective, the village of Molain and the Seille River.⁵

On October 11 the left of the line remained stationary, but on the right the town of la Haie Menneresse was taken, and the line in general was advanced about 910 meters (1,000 yards).²⁰

On the night of October 11-12 the 30th Division was relieved by the 27th Division, and remained in support of that division until October 16.²⁰

On the night of October 15-16, the 59th Brigade took over a portion of the line held by the 27th Division,² the front being practically the same as that which had been turned over on the night of October 11-12. The front assigned to the 30th Division was only about 1.8 km. (1.1 miles) in extent, but included the towns of St. Martin-Riviere and Molain, both of which were strongly held; while the high ground on the east bank of the river was fortified by trenches and wire.²⁰

On October 17 the 59th Brigade attacked, its objective being a line at about 5.4 km. (3.3 miles) in front. The Infantry and tanks moved off promptly at the prescribed time. Strong resistance was encountered, particularly from the towns above mentioned; this, together with some difficulty experienced in crossing the Selle River, made it impossible to keep up with the barrage. After losing the barrage, heavy enemy machine-gun and artillery fire rendered progress impossible without ruinous losses. The brigade therefore entrenched on a line at about 3.6 km. (2.2 miles) from the parallel of departure, and was here relieved by the 60th Brigade on the night of October 17-18.²⁰

On October 18 the 60th Brigade attacked, its objective being the high ground commanding the Sambre canal. The terrain included in the attack presented many difficulties to an advance. The towns of Ribeaupville, Ecaillon, Ribeaucourt, and Mazinghien furnished a series of natural centers of resistance, with mutual covering fire, while many hedges and woods were filled with machine-gun nests. Very stubborn resistance was encountered, especially from the above-mentioned towns; though the line was advanced some 1.8 km. (1.1 miles) on the right, it was bent back on the left above the town of Mazinghien, which offered exceptionally good opportunities for defense. This line held during the night October 18-19.²⁰

On October 19 the attack was again made, the objective being again the high ground overlooking the Sambre canal. Again the attack met with severe resistance, especially from la Haie Tonnoile Ferme. All resistance, however, was finally overcome and the troops were practically on their objective when a halt was ordered to straighten out the division line preparatory to being relieved by the British 1st Division.

On the night of October 19-20 the relief was made, and the division moved back by easy stages to the Tincourt and Roisel areas.

On October 24 it entrained for the Guerrien training area, northeast of Amiens, where it remained until November 21.^{19, 20}

MEDICAL DEPARTMENT ACTIVITIES

On July 5 three field ambulances, Nos. 132, 133, 134, of the British 39th Division were attached to the 30th Division to care for its sick and wounded. Field Ambulance No. 133 was detached on August 16, 1918. The sanitary train of the division did not join until August 1, 1918, when Field Hospitals No. 118 and No. 119 and Ambulance Companies No. 118 and No. 119 reported.

In order to comply with the British Tables of Organization, the field hospitals and ambulance companies were combined on August 14 and designated Field Ambulances No. 118 and No. 119.^{21, b}

On September 28 the following medical arrangements were made: Two aid posts were established in both the right and left sectors of the division, and back of these, in each sector, one ambulance loading post (collecting station). Advance dressing stations were established by the American Field Ambulance No. 119 at Jeancourt in the right sector and at Templeux le Guerard in the left. A station for walking wounded was also located at the latter point. The main dressing station was established by American Field Ambulance No. 118 and the divisional gas center by British Field Ambulance No. 132 at Marquaix. The ambulance dispatch post was located at Roisel. British Field Ambulance No. 134, in reserve, was to operate a temporary advance dressing station in the right sector. The bearer subdivisions of the American Field Ambulance No. 118 and the British Field Ambulance No. 132 were ordered to be relieved on call by the commanding officer of the American Field Ambulance No. 119, as were all ambulances and wheeled litters.²¹

Within one and a half hours after the barrage was let down at 5.30 a. m. the wounded began to come in rapidly, and soon the advance stations were working to full capacity. Large numbers of German prisoners were employed to bring in litter cases from the front lines. The walking wounded, after being dressed and receiving antitetanic serum, were sent by auto bus or truck to an entraining point on a light railway which carried them to within 1.6 km. (1 mile) of Tincourt, where a casualty clearing station was located. Congestion developed at the dressing stations, particularly at Jeancourt, but was overcome by obtaining additional ambulances. The casualty clearing stations nearest the field ambulances were soon filled to capacity, necessitating evacuation to others farther to the rear. Cases of abdominal and chest wounds were selected for immediate evacuation to the casualty clearing station. The average time necessary for the removal of these and other seriously wounded patients from the time their wounds were received until they reached the casualty clearing station, was approximately four and a half hours. In the 24 hours from 6 a. m. September 29 to 6 a. m. September 30, a total of 2,075 cases were evacuated, and the following day 1,265. Each medical formation replenished its supplies by informal requisition on the organization in its rear.²¹

On October 8 the advance dressing station was moved forward to Montbrehain and the American Field Ambulance No. 119 opened a main dressing station and degassing center at Joncourt, where American Field Ambulance No. 118 went into reserve.²² On October 9 the ambulance section of this company opened an advance dressing station at Busigny. The station for walking wounded was advanced to Bellicourt, where patients were entrained. Later the walking wounded were entrained at Joncourt. The American Field Ambulance No. 119 moved up to Montbrehain; the 132d (British) went into

^b Unfortunately the history of the division does not show the activities of the 105th Sanitary Train during the Ypres-Lys operation.

reserve. The walking-wounded station, conducted by the British Field Ambulance No. 134 was now advanced to Busigny.²¹ On October 10 a hospital for divisional sick was established at the main dressing station at Montbrehain and continued to receive patients after the division withdrew from the line on the night of October 11-12.²¹

When the division again reentered the line on the night of October 15-16, in the right of the Second Corps, the American Field Ambulance No. 118 established the advance dressing station at Busigny, where the British Field Ambulance No. 134 opened the post for walking wounded, evacuating by light railroad to the casualty clearing station at Templeux le Guerard. The main dressing station and gas center were established by the American Field Ambulance No. 119 at Montbrehain, and the British Field Ambulance No. 132 was in reserve.²¹ On October 17 the last-mentioned unit soon opened the main dressing station and gas center at Bohain, while that operated by the American Field Ambulance No. 119 cleared at Montbrehain and went into reserve at that place.²¹ On the 18th the American Field Ambulance No. 118 opened an advance dressing station at Molaine, and at the same time the station for walking wounded was brought forward from Busigny. The distance from the main dressing station at Bohain to the casualty clearing station at Templeux le Guerard was now so long that some difficulty occurred in clearing the former on the night of October 17-18.²¹ The following night the division was relieved and the sanitary train accompanied it to the Querrieu area, near Amiens. British Field Ambulances No. 132 and No. 134 were relieved from duty with the division on November 17.²¹

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- (5) Report of Medical Department activities, Second Corps, A. E. F., by Col. C. C. Collins, M. C., corps surgeon, undated. On file, Historical Division, S. G. O.
- (6) Operations report, 27th Division, undated.
- (7) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College. 1700, (27th Division).
- (8) Front line map, American battle monuments commission.
- (9) Report of Medical Department activities, 27th Division, A. E. F., prepared under the direction of the division surgeon, undated, 2, 3. On file, Historical Division, S. G. O.
- (10) *Ibid.*, 5.
- (11) *Ibid.*, 7.
- (12) *Ibid.*, 8.
- (13) *Ibid.*, 9.
- (14) *Ibid.*, 10.
- (15) *Ibid.*, 11.

- (16) Ibid., 12.
- (17) Ibid., 13.
- (18) Ibid., 14.
- (19) Outlines of Histories of Divisions, U. S. Army, 1917-1919, prepared in the Historical Section, the Army War College. On file, Historical Section, the Army War College. 1700 (30th Division).
- (20) Operations reports, 30th Division, undated.
- (21) War diaries, division surgeon's office, 30th Division. On file, Historical Division, S. G. O.

SECTION VII

AMERICAN EXPEDITIONARY ACTIVITIES IN GERMANY, ITALY, NORTH RUSSIA, AND SIBERIA

CHAPTER XXXVIII

THE ADVANCE INTO GERMANY

THE THIRD ARMY

The following is quoted from the Final Report of Gen. John J. Pershing:¹

In accordance with the terms of the armistice, the Allies were to occupy all German territory west of the Rhine, with bridgeheads of 30 km. radius at Cologne, Coblenz, and Mayence. The zone assigned the American command was the bridgehead of Coblenz and the district of Treves. This territory was to be occupied by an American Army, with its reserves held between the Moselle—Meuse Rivers and the Luxemburg frontier.

The instructions of Marshal Foch, issued on November 16, contemplated that 2 French infantry divisions and 1 French cavalry division would be added to the American forces that occupied the Coblenz bridgehead and that 1 American division would be added to the French force occupying the Mayence bridgehead. As this arrangement presented possibilities of misunderstanding due to difference of views regarding the government of occupied territory, it was represented to the marshal that each nation should be given a well-defined territory of occupation, employing within such territory only the troops of the commander responsible for the particular zone. On December 9 Marshal Foch accepted the principle of preserving the entity of command and troops, but reduced the American bridgehead by adding a portion of the eastern half to the French command at Mayence.

Various reasons made it undesirable to employ either the First or Second Army as the Army of Occupation. Plans had been made before the armistice to organize a Third Army and, on November 14, this army, with Maj. Gen. Joseph T. Dickman as commander, was designated as the army of occupation. The Third and Fourth Army Corps staffs and troops, less artillery, the First, Second, Third, Fourth, Thirty-second, and Forty-second Divisions, and the Sixty-sixth Field Artillery Brigade were assigned to the Third Army. This force was later increased by the addition of the Seventh Corps, Maj. Gen. William M. Wright commanding, with the Fifth, Eighty-ninth, and Ninetieth Divisions.

Headquarters of the Third Army was first located at Ligny-en-Barrois, that of the Third Corps at Dun-sur-Meuse, and that of the Fourth Corps at Woenville.²

When the armistice became effective (November 11, 1918) the Third Corps held the general line from left to right, as follows: From the Meuse River at Stenay along the northern and eastern edge of the Bois du Chenois to the southwest corner of Bois Robert; thence to a point 100 meters south of Hugne Ferme, thence 400 meters north of Louppy to 400 meters north of Remoiville, thence 400 meters east of Jametz, thence south along the Jametz—Peuvillers road to a point, thence south along the eastern edge of Bois Jametz and Bois de

Lissey to a point on the Vittarville—Eurey road, thence south to bridge over the Theiute River, where it joined the French. The 32d Division was on the right from Jametz (exclusive) to Peuvillers (inclusive). One regiment of the 2d Division was at Stenay. The 5th and 42d Divisions were in reserve.² St. Pierremont Ferme, south of Sedan; 3d Division in vicinity of Bar-le-Duc.

On the same date the Fourth Corps was disposed as follows: 1st Division, 4th Division at Boucq. The 2d, 32d, and 42d Divisions were retained in the Third Corps for the army of occupation, and on November 17 held the same positions as those mentioned above. The 4th Division remained in the Fourth Corps and at 5 a. m. on November 17 the 1st and 3d Divisions moved into position through the 28th and 7th Divisions, which on that date were transferred to the Sixth Corps.³

General Pershing's report continues: ⁴

The advance toward German territory began on November 17 at 5 a. m., six days after signing the armistice. All of the allied forces from the North Sea to the Swiss border moved forward simultaneously in the wake of the retreating German armies.

When the march began all units of the various organizations of the Third Army were in place, and the forward movement began in perfect order. The zone of the advance of this army was as follows: ⁵ Northern (left): Mouzon—Carignan—Florenville—Jamoignes—Etalle—Habay-la-Neuve—Redange—Grosbous—Diekirch—Wallendorf (all inclusive). Southern (right): Thiaucourt—Chambley—Conflans-en-Jarnisy—Moyeuvre—Gandringen—Thionville—Mallingén—Schengen (all inclusive).³

Advance elements of the army on the first day reached the general line: Ecouvies—Sorbey—Gouraincourt—Mars-la-Tour. Next day they reached the line: Etalle—St. Leger—Ruelle—Aubange—Longwy—Audun-le-Roman—Briey, and headquarters moved to Longuyon.⁵

On November 20 the general line of the army was: Grendel—Autelbas—Mondercange—Dudelange—Wollmeringen—Gentringen. Next day the line reached Vichten—Mersch—Schuttrange—Rentgen—Kattenhofen. Boundaries of the army zone of advance remained unchanged. Each corps kept two divisions in the front line and one in the second.⁶

The advance units passed through Luxemburg on November 21 in review before General Pershing, and the following day the line was advanced to Ingeldorf—Betzdorf—Wormeldange, thence to the Moselle River, to Schengen.⁶

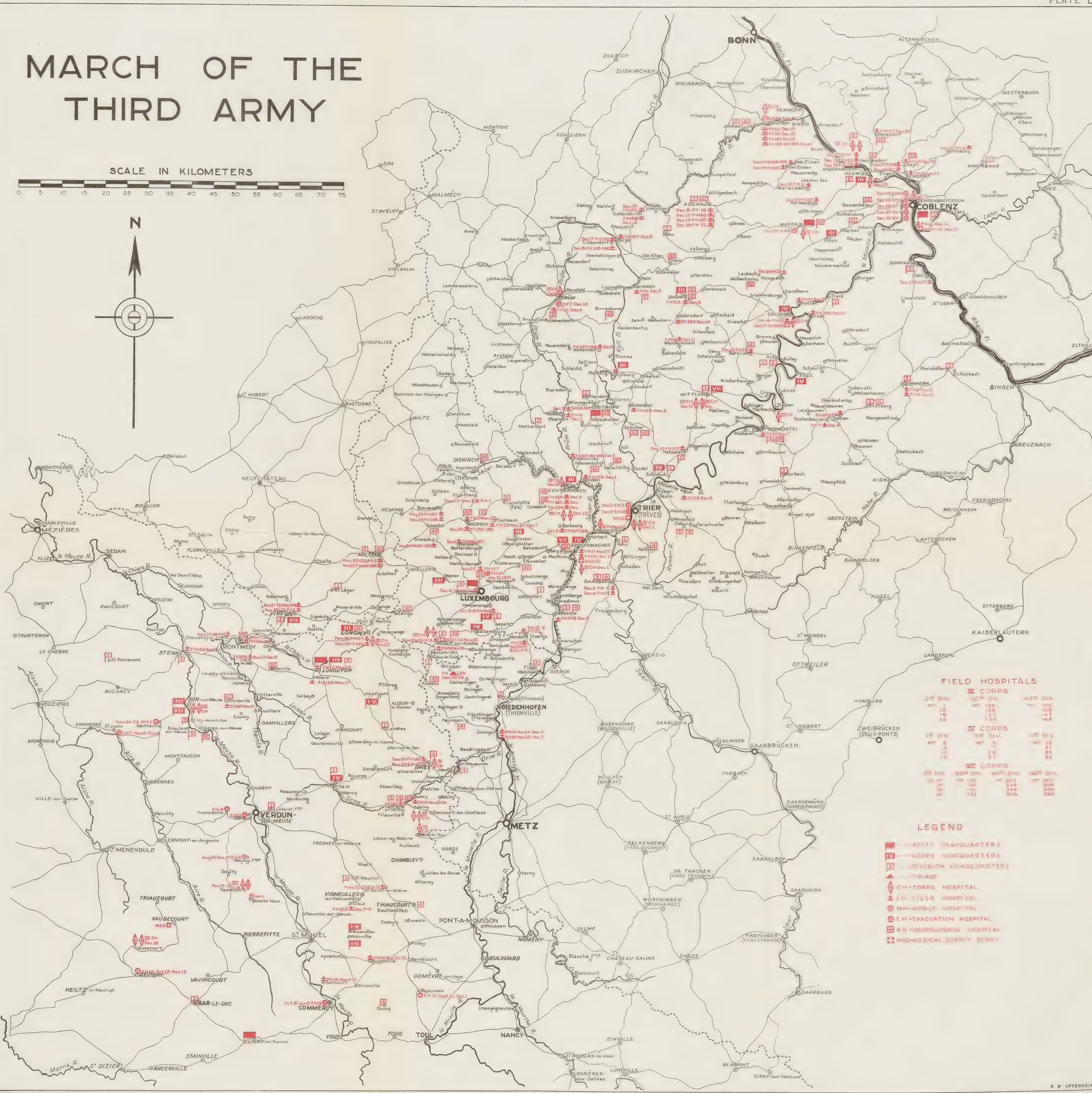
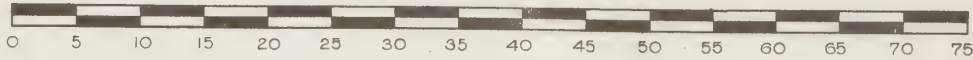
Third Army headquarters moved to Hollerich, a suburb of the city of Luxemburg, on November 22. The boundary line between the Third and Fourth Corps was now extended as a line Roodt-sur-Syre—Berg-sur-Syre—Wasserbillig. On the 23d the army began its advance to the Luxemburg-German frontier, and there it remained until 5.30 a. m. of December 1, when it entered Germany as part of the entire allied force.⁶

General Pershing's report continues: ⁷

Upon entering the Duchy of Luxemburg in the advance, a policy of noninterference in the affairs of the grand duchy was announced. Therefore, when the French commander in the city of Luxemburg was given charge of all troops in the duchy, in so far as concerned the "administration of the Grand Duchy of Luxemburg," my instructions

MARCH OF THE THIRD ARMY

SCALE IN KILOMETERS



FIELD HOSPITALS

III CORPS			
27 th DIV.	32 nd DIV.	42 nd DIV.	
Nº 1	Nº 125	Nº 164	
13	126	165	
16	127	166	
IV CORPS			
1 st DIV.	3 rd DIV.	4 th DIV.	
Nº 2	Nº 5	Nº 19	
3	7	21	
12	26	23	
VI CORPS			
5 th DIV.	38 th DIV.	64 th DIV.	40 th DIV.
Nº 17	Nº 178	Nº 353	Nº 387
25	180	354	388
30	182	356	389

LEGEND

- ARMY HEADQUARTERS
- IV --- CORPS HEADQUARTERS
- 3 --- DIVISION HEADQUARTERS
- ▲ BASE
- ◇ CH-CORPS HOSPITAL
- ± FH-FIELD HOSPITAL
- ⊕ MH-MOBILE HOSPITAL
- ⊕ EH-EVACUATION HOSPITAL
- ⊕ NH-NEUROLOGICAL HOSPITAL
- ⊕ MSD-MEDICAL SUPPLY DEPOT

were that our troops would not be subject to his control. Later, at my request, and in order to avoid possible friction, Marshal Foch placed the entire duchy in the American zone.

After the passage of the Third Army through Luxemburg, the occupation of that principality for the purpose of guarding our line of communications was intrusted to the 5th and 33d Divisions of the Second Army. The city of Luxemburg, garrisoned by French troops and designated as headquarters of the allied commander in chief, was excluded from our control.⁴

Upon arrival at the frontier, a halt was made until December 1, when the leading elements of all allied armies crossed the line into Germany.⁴

Orders were issued on November 29 for the Third Army to resume the march, and on December 1 it had reached the general line Alfersteg—Winterscheid—Masthorn—Mulbach—Kill—Cordel—Trier—Konz; thence the Saar River within army limits.⁸ Headquarters of the Third Army, at Hollerich, was ordered to Bitburg on December 3; that of the Third Corps, at Junglinster, to Echternach on December 1 and to Kyllburg on December 3; that of the Fourth Corps, at Hesperange, to Grevenmacher on December 1 and to Schweich on December 3; that of the Seventh Corps, at Virton, to Grevenmacher on December 4; that of the 5th Division, at Longuyon, to Hollerich on December 4.⁹

The general line reached through the advance of December 2 was: Krewinkel—Roth—Neuendorf—Dausfeld—Neidenbach—Metterich—Rievenich—Morscheid—Mandern—Hirschfelderhof.¹⁰

On the second day of the operations in Germany the roads were found to be poorer and progress was more difficult. Roads were below the standard of French and Luxemburg highways, and the several hilly sections which had to be traversed delayed the march.¹⁰ On the 3d of December the Third Army had reached the line: Budesheim—Salm—Dahlem—Ormont—Pronsfield—Arzfeld—Manderfeld—Olzheim—Salm—Eisenschmidt—Wittlich—Berncastel—Noviand—Heidenburg—Beuren—Wadril.¹¹

On the same day, December 3, when Third Army headquarters moved to Bitburg, across the German frontier—a movement of over 50 km. (31 miles)—the army staff and the various sections were functioning the same date and liaison between the Third and Fourth Corps was complete. Supplies were being moved up in sufficient quantities, and the Signal Corps soon had completed telephone and telegraph connections with the rear.¹¹

The army having established itself in German territory, at once took measures for carrying out orders regarding the treatment of German civilians and the protection of property. While the troops were not to fraternize nor to have anything resembling friendly intercourse with the Germans, forbearance was to be shown and property carefully protected. The army entered Germany as a conquering army, but there was to be no wanton destruction nor any act of violence.¹¹

The general line at this time (December 4) was: Dahlem—Glaadt—Oberbettingen—Kalenborn—Wallenborn—Eisenschmidt—Wittlich—Zeltingen—

Bernecastel—Gornhausen—Hunolstein—Basch—Malborn—Nonweiler—Otzenhausen.¹¹

German civilians evinced great curiosity and interest concerning the movement of American troops, but exhibited no unfriendliness, and as time passed they showed relief from early apprehension.¹⁰

The advance continued on December 5 and 6, and on the latter date the army front was the general line: Udelhoven—Dockweiler—Boos—Laubach—Driesch—Mesenich—Metzenhausen—Sulzbach.¹¹ Next day the line took in Rupperath—Gilgenbach—Drees—Boos—Kempenich—Mayen—Greimersburg—Buch—Simmern—Kellenbach. On December 7 the boundary between the Third and Fourth Corps was extended to Naunheim—Ruber—Kobbern (all to Fourth Corps), and thence to the mouth of the Moselle River.¹²

Third Army headquarters opened at Mayen on December 10; Third Corps headquarters, at Daun, to open at Polch on the same date, and Fourth Corps headquarters, at Zell, to open at Cochem on December 9. The Seventh Corps moved up to Grevenmacher and the 5th Division to Hollerich.¹²

The first unit of the Third Army to reach Coblenz was the 2d Battalion, 39th Infantry.

The general line reached on the 9th was the Rhine River from Rolandseck to Brohl, thence Wassenach—Kerben—Munstermaifeld—Liesenfeld—Rheinbollen. Exactly 22 days from the time the march to Germany had begun, and 25 days after issuance of orders for this march, the American Army had marched from the Verdun-Argonne battle front through Lorraine, Luxemburg, and over more than 150 km. (93 miles) of German territory to the banks of the Rhine. The long march had been made in perfect order. Every division and every corps had moved forward with precision. There had been no delays and no hitches in opening army headquarters. In the march from Luxemburg through German territory, more than 200,000 men marched through fields, towns, and villages and over roads and highways of a nation with whom until a short time before they had been at bitter war; yet not a complaint was registered by the conquered enemy of a single case of ill treatment, unfairness, or trouble of any kind.¹² General Pershing, in this connection, made the following comment:⁴

The advance to the Rhine required long, arduous marches, through cold and inclement weather, with no opportunity for troops to rest, refit, and refresh themselves after their participation in the final battle. The army of occupation bore itself splendidly and exhibited a fine state of discipline both during the advance and throughout the period of occupation.⁴

From a military point of view the most important difficulties met during the advance were: (1) The formation of an army staff (167 officers) by drawing its members from all parts of France without disturbing existing staffs; (2) maintenance of communication and supplies for a command moving rapidly through evacuated, partially devastated territory where transportation facilities in many places had been completely destroyed and where food was extremely scarce; (3) the rebuilding of roads and reestablishment of telephone and telegraph lines; and (4) close check on all enemy movement, following

his plan of withdrawal and verifying his compliance with the terms of the armistice.⁹

The Seventh Corps, assigned to Third Army November 22, was charged with the duty of covering the advance of the other corps and with maintenance of army communications. On December 12, the 33d Division was assigned to the Seventh Corps, then in Luxemburg, to be in turn relieved five days later and transferred to the Second Army.³

Boundaries of the zone of advance of the Third Army in Germany were: Northern (left): Between Garignan and Merzig (exclusive) Oberfeulen—Neiderfeulen—Bourscheid—Hoscheid—Consthum—Bockholz-les-Hosingen (all inclusive)—Munshausen (exclusive)—Marbourg—Roder (both inclusive)—Heinerscheid—Kalborn (both exclusive); thence the eastern frontier of Luxemburg; thence the administrative boundary separating the districts of Coblenz and Trier from those of Cologne and Aix-la-Chapelle—approximately the line Lommersweiler—Manderfeld—Kronenburg—Waldorf—Rohr—Hilberath—Oberwinter.⁸ Southern (right): From Schengen to the southern limits of the circle of Saarburg; thence the northern and eastern limits of the circle of Merzig; thence the northwestern limits of the principality Birkenfeld; thence the northwestern limit of the circle of Kreuznach; approximately the line Schengen—Saarburg—Sitzerath—Muhlfeld—Zusch—Kemfeld—Kellenbach—Dichtelbach—Trechtingshausen.⁸

The Third Army headquarters were established at Coblenz and an advance general headquarters located at Treves. Steps were immediately taken to organize the bridgehead for defense, and dispositions were made to meet a possible renewal of hostilities.⁴

During this advance into German territory, staff officers had been sent ahead to study conditions, to prepare plans for crossing the Rhine, and for occupation of the bridgehead. In expectation that American troops would occupy the entire bridgehead at Coblenz, the original plans contemplated four divisions on the right (eastern) bank of the Rhine, two in support on the west side, and two in reserve farther toward the rear, with one on the lines of communication across Luxemburg. The four divisions were to cross the river simultaneously; one over the bridge at Remagen, one at Engers, one on the pontoon bridge at Coblenz, and the fourth on the Pfeffendorf bridge at Coblenz, with the added help of ferries at St. Goarshausen and Boppard. A preliminary survey was made also of the country composing the bridgehead, and a plan of action prepared in case hostilities should be resumed. Returning to army headquarters at Mayen, the staff officers detailed for this work found that plans must be modified somewhat, as only three divisions were to be sent across the Rhine. The southern boundary of the Third Army was changed. Near Schnepfenbach it remained as before, thence became the administrative limits separating the Kreise of Berncastel, Wittlich, Cochem, Mayen, Coblenz, Montabaur, and Westerburg from those of Simmern, Zell, St. Goar, St. Goarshausen, Diez, and Limburg. This made it necessary to move the right division (3d) to the north, holding it on the left bank of the Rhine.¹³

Field Order No. 11, Third Army, issued on December 12, directed the Third Army to occupy the northern sector of the Coblenz bridgehead, advance

elements to cross the Rhine at 7 o'clock on December 13. Before this advance the 1st Division passed to the command of the Third Corps, which with the three divisions, 1st, 2d, and 3d, occupied the prescribed sector. On the same day the 42d Division passed to the command of the Fourth Corps, and the latter, in support of the Third Corps, continued its march to occupy the Kreise of Mayen, Ahrweiler, Adenau, and Cochem.¹³

After the Rhine was crossed, Field Order No. 12, Third Army, under date of December 13, prescribed the following forward limit of the American sector at Coblenz bridgehead, to be determined by straight lines joining the following villages:¹⁴ Malmeneich—Hundsangen—Molsberg—Salz—Mallren—Elbingen—Obersayn—Wolferlingen—Seeburg—Mundersbach—Hilgert—Steimel—Lahfbach—Dottesfeld—Heckerfeld—Fulenburg—Borscheid—Ferntal—Neschen—Weibenfels—Arnsau—Hakenen—Hothensuz—Ariendorf.¹⁴

The commanding general of the Third Corps was instructed to take immediate steps to have this line plainly marked by signs on every road crossing the boundary and to prevent all allied troops from crossing it. The civil authorities in each village on the prescribed boundary were also notified of the limits arranged. By nightfall of December 14, troops were occupying their positions at Coblenz bridgehead.¹⁴

These advanced positions were occupied without disorder. Though civilians in the Rhine area were less friendly than those seen farther west, no hostility to our troops was openly exhibited.

Third Army headquarters moved, on December 15, from Mayen to Coblenz; Third Corps headquarters from Polch to Neuweid, Fourth Corps headquarters remaining at Cochem, with that of the Seventh Corps at Grevenmacher. During the Third Army's crossing of the Rhine no hostilities were encountered. Food and fuel supplies in the occupied area were adequate.¹³

MEDICAL DEPARTMENT ACTIVITIES

The order designating the chief surgeon, Third Army, was received by him November 14, and the next day, after reporting to the headquarters of this army, he proceeded to Chaumont for conference with members of the general staff concerning Medical Department arrangements for the march into Germany. Originally it had been planned to send forward a number of base hospitals to be grouped at Coblenz and Trier, but this plan was abandoned at request of the chief surgeon, Third Army, who apprehended a divided responsibility if these units operated in the army area. It was then decided to send sufficient evacuation hospitals with additional personnel, equipment, etc., these to operate under the army surgeon.¹⁵

The following personnel was on duty in the office of the chief surgeon, Third Army: Executive officer, hospitalization officer, personnel officer, medical supply officer, evacuation officer, and representative of chief surgeon, A. E. F., consultants in medicine, surgery, orthopedic surgery, neuropsychiatry, urology, ophthalmology, otology and laryngology, finance and accounting, sanitary inspector, epidemiologist, chief dental surgeon, director of laboratories, director of nurses, water supply officer.¹⁶

The assistant chief of staff, G-4, exercised supervision over the Medical Department and coordinated its activities with those of the various other sections and services. The army surgeon's office dealt directly with G-4, and through this section of the general staff.¹⁷

The hospitalization officer was sent forward immediately to arrange for our advance, and from this time until the troops reached Coblenz was as far forward as orders permitted, investigating sites and facilities for hospitalization.¹⁷

It was planned that the sick be evacuated from corps and field hospitals to the hospital center at Toul on the east and to Evacuation Hospital No. 15 near Verdun on the west while the army was within reasonable evacuating distance of these places. It was intended to move an evacuation hospital complete into the city of Luxemburg before the arrival of our troops in that area, and to that end the hospitalization officer preceded the army into Luxemburg and selected a large modern school building as the location for an army evacuation hospital. This building would have provided a complete 1,000-bed hospital. G-4, at General Headquarters, had ready an evacuation hospital complete in personnel and equipment and a sufficient number of motor trucks available to transport it into the city of Luxemburg. All arrangements had been perfected with the Luxemburg authorities, and everything was ready to locate these 1,000 beds for the use of the Third Army. When the necessary authority from army headquarters was requested, the chief surgeon, Third Army, was informed that the French high command objected to any American organization entering the city of Luxemburg, for which reason the request was disapproved.¹⁷ The army evacuation service had also met with another serious difficulty. Railroad communication over the devastated area had been completely destroyed, and for two weeks it was impossible to get a hospital train forward to relieve the field hospitals of corps or divisions, the first train arriving at Briey on December 1.¹⁷ Likewise, it was impossible at this time to move evacuation hospitals forward by train. Except for the movement of Evacuation Hospital No. 18 to Briey, which arrived there November 24, the first of these hospitals to move to a more forward position by train were Evacuation Hospitals No. 3 and No. 12, which reached Trier on December 2. In the meantime, the division and corps field hospitals, though not equipped with personnel, proper supplies, or nursing facilities for the protracted hospitalization of numerous patients, were forced to retain not only the slightly sick but also to care for all patients whatever their condition until the railroad situation could be relieved and an evacuation hospital could be sent forward. On November 24, 1918, Evacuation Hospital No. 18, from the Second Army, arrived at Briey and there took over a small German hospital, where they accommodated about 200 patients. This proved a great relief, though this hospital was not large enough to receive all the patients evacuable from divisions.¹⁸

The nearest hospital with proper equipment, supplies, and personnel for the care of pneumonia and other serious diseases was that at Briey, 80 km. (50 miles) from the divisions farthest forward, and seriously sick patients

had to be evacuated the distance mentioned from those formations. The weather was bad and the roads had been torn by shell fire. Also, because of lack of hospital trains, evacuations from Briey and from Longwy, where the Third Corps maintained a field hospital, were by ambulance to Toul and Verdun, respectively. These were very long hauls, but there was no alternative. It should be noted here that a number of men who ordinarily would have been returned to their commands in a week or so had to be sent to the rear in order to clear beds for other patients from the front.¹⁸

From the foregoing it becomes evident that the carefully formulated plans originally developed by the Medical Department for field hospitalization and evacuation did not materialize.

The hospital at Briey was greatly overcrowded, for it had at least 1,000 patients, with hospital facilities for only 200, but fortunately the additional patients were of a class which required little save food and rest and fair shelter. The long evacuation and overcrowding in hospitals could have been obviated to a great extent if the American Army had been allowed to hospitalize in the city of Luxemburg, this being the only suitable location in the duchy for a 1,000-bed evacuation hospital. Though divisional, corps, and army sanitary trains were 100 per cent motorized, it was desired to reduce the transportation of the disabled, especially of the serious cases, to a minimum.¹⁸

About November 24 permission was obtained from army headquarters for the officer in charge of hospitalization to proceed, ahead of the army, into Trier. His mission was to find sites for hospitals in that city, but he was at once confronted by about 160 American and allied prisoners of war—including about 50 Americans—in German hospitals in a pitiful condition. The food supply was practically exhausted and there were no suitable diets available for the sick. German medical authorities had apparently given them the best of medical and surgical care, but they did not have food enough for themselves to constitute a balanced ration and some of these patients were suffering from lack of proper food.¹⁸ These facts were reported to the chief of staff, Third Army, who made every effort to permit the medical department to enter Trier at once with food, doctors, nurses, and supplies to care for our wounded prisoners of war; but the request of the commanding general, Third Army, was disapproved by General Headquarters. Instructions were given that no medical organization cross the Moselle River until December 1.¹⁹

A request was made to G-1, Third Army, for authority to take over, in Trier, barracks and German hospitals sufficient to afford 5,000 hospital beds for our use. After many requests and conferences with G-4 and G-1 and, finally, with the chief of staff, Third Army, two barracks which had been used as German auxiliary hospitals were turned over to the chief surgeon, Third Army, for hospital purposes. In these were to be installed two evacuation hospitals with a total bed capacity of about 2,000 patients. Competition between different services and army units to secure buildings in Trier was extremely keen, and it was very difficult to obtain a final decision in this matter. Finally, on December 1, Field Hospital No. 303, of the Fourth Corps Sanitary Train, was allowed to enter Trier. It then took over the German

auxiliary military hospital in the Horn Kaserne, and began the care of the allied sick and wounded in this hospital. On December 2 a part of Evacuation Hospital No. 3, consisting of 16 officers, 25 nurses, and 28 enlisted men proceeded 160 km. (100 miles) by ambulance through Verdun, Longwy, and Luxemburg to Trier, where it found 1,000 sick—mostly mild cases—and relieved the corps field hospital above mentioned. The German female nursing staff continued on duty here for about a week. No supplies were brought by this detachment of Evacuation Hospital No. 3 except 3 days' rations. At this time, too, there was great difficulty in getting rations from the army, and for several days the hospital food supply was rather limited.²⁰

Evacuation Hospital No. 12, at Royaumeix, France, in the Second Army area, on December 1 received orders to proceed to Echternach, Luxemburg, and next day the advance party of this hospital organization started in ambulances furnished by the Second Army to join the army of occupation. En route its orders were changed and it was directed to proceed to Trier. On December 2 this hospital occupied the Stadt Kaserne, Trier, formerly used by the Germans as an auxiliary military hospital, with 1,500 beds. Patients began to arrive at about the same time as the personnel of Evacuation Hospital No. 12; 230 were admitted on the first day.²⁰

On December 4, a hospital train was secured and practically all of the allied prisoners of war were evacuated from Trier and Echternach to France.²⁰ By December 8, the advancing American army had close to 1,000 patients in the hospitals at Trier, which rapidly expanded by taking over all available buildings in the barracks.²⁰

The establishment of Evacuation Hospitals No. 3 and No. 12, at Trier, with about 2,500 beds available and facilities for twice that number, sufficient personnel and supplies, had as a matter of fact considerably relieved the situation. This situation had existed from November 17 to December 3. Hospital trains were soon making frequent evacuations from Trier.²⁰

Yet because of the bad condition of railroads and roads, amounting in places to total destruction, it was not possible to bring forward sufficient army hospitals and to have them function properly until the early part of December. Thereafter army hospitalization met all requirements. Meanwhile, though it had been necessary to require the medical departments of corps and divisions to perform services which their resources and equipment did not contemplate, their resourcefulness had met a difficult situation satisfactorily.

About December 10, the army surgeon received a statement of the permanent locations which would be held by the eight divisions of the army of occupation, and he instituted measures to establish 5,000 beds in Coblenz for the troops of the 42d, 32d, 1st, 2d, and 3d Divisions. The plans now contemplated that all sick who would probably be fit for duty in two months be retained in the army hospitals and that only other patients would be evacuated into the hospitals of the Services of Supply. Hospitalization of 5 per cent was planned for this army of 300,000 men, but this was never fully realized.²¹

Authority was obtained by the officer in charge of hospitalization to proceed ahead of army headquarters to inspect suitable locations for hospitals

in the occupied area. Evacuation Hospitals No. 3 and No. 12 were assigned station in two casernes in West Trier, the advance general headquarters refusing to allow the Medical Department to take over the complete and well-equipped German military hospitals in the city of Trier proper, as that community was reserved for its exclusive occupancy. These hospitals had a capacity of 4,000 beds. The hospitals at West Trier were to receive the sick from the 90th Division.

The next location selected for an army hospital was Traben-Trarbach, on the Moselle River, midway between Trier and Coblenz. Three hotels and a school building were to be requisitioned there for Evacuation Hospital No. 4,

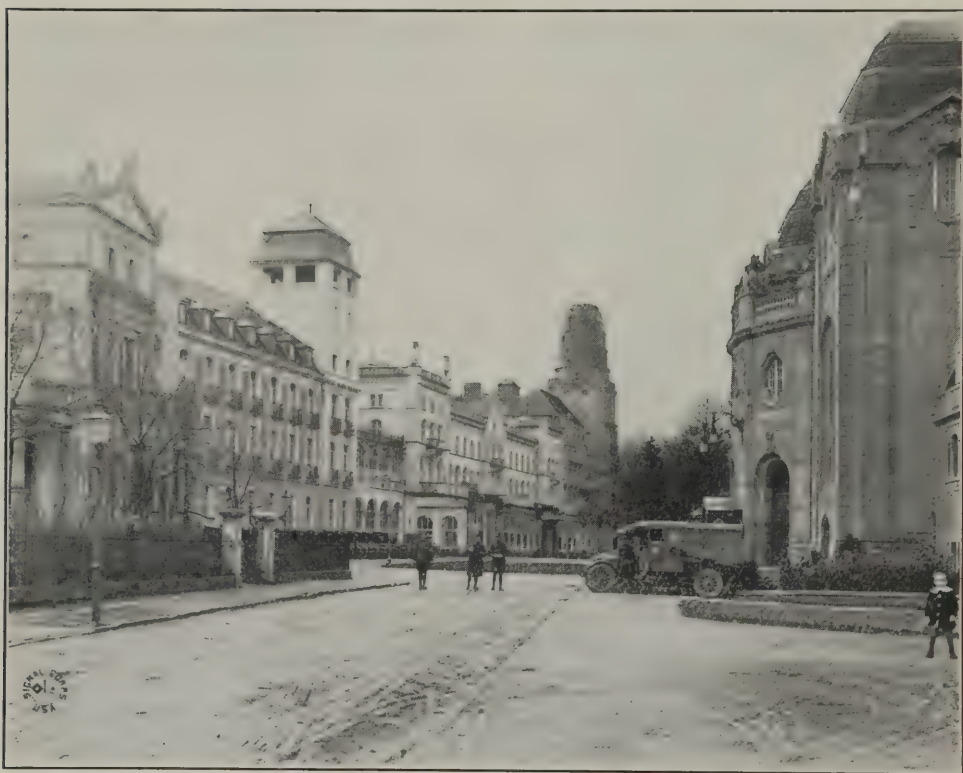


FIG. 90.—American hospital and infirmary, Neuenahr, Germany, December 29, 1918

which had been ordered into Traben-Trarbach and had actually arrived when word was received that no American troops would be allowed there as it was to be occupied by the French. A few days later Evacuation Hospital No. 4 was moved into Coblenz.²¹

A large school building at Prum, about 60 km. (37.2 miles) from Trier in the area occupied by the 89th Division, was secured with comparatively little difficulty for Evacuation Hospital No. 7.¹⁹ The 4th Division was to be provided for by Evacuation Hospital No. 8, which was ordered to Mayen.²¹

It was the intention to establish 2,000 beds at Ems, where two large summer hotels were selected and arrangements made for moving two evacuation hospitals to that point, but in the readjustment of army areas Ems was re-

moved from the American sector.¹⁰ Four German military hospitals in Coblenz were then taken over by the American Third Army. As these could accommodate only about 1,500 patients, it was necessary to secure German barracks for additional beds.¹⁰ A site at Neuenahr to serve the 42d Division in the extreme left of the American sector was also selected, but could not be utilized before February, 1919, when Evacuation Hospital No. 26 took over a large hotel there which would accommodate 1,000 beds.¹⁰

When, in the week of December 15, our divisions reached their final areas, additional evacuation hospitals arrived. As it was intended that these hospitals should function as base hospitals in order that as many men as possible might be retained in the army and returned to duty, their staffs were



FIG. 91.—Surgical and medical wards of the American hospital group, Coblenz, Germany

reinforced by expert, trained personnel, and they were supplied with ample matériel. They were well and suitably housed, a few in buildings constructed for hospital use; others were in large schools and military barracks, previously used by the Germans as hospitals. It was planned that these hospitals be grouped in centers, so far as possible, in order that their special services might be the more highly developed; but owing to the large area which the Third Army occupied, it was necessary to place a few isolated hospitals at outlying points. The largest hospital center was located at Coblenz, though competition for buildings there was very severe.¹⁶

Evacuation hospitals of the Third Army were finally located as follows: No. 3 and No. 12, 1,500 beds each, at West Trier; No. 7, 500 beds, at Prum; No. 4, 450 beds, No. 6, 600 beds, No. 2, 1,500 beds, No. 9, 1,000 beds, No. 14, 550 beds, at Coblenz; No. 8, 500 beds, at Mayen; No. 26, 1,000 beds, at Neuenahr.¹⁹

As nearly as conditions would permit, the various hospitals at Coblenz functioned as a hospital center, under control of the hospitalization section of the chief surgeon's office, Third Army, each hospital being designated to receive certain classes of cases. Evacuation Hospital No. 6, established in a finely equipped German military hospital in Coblenz, admitted all surgical and orthopedic cases and sick officers and nurses. Evacuation Hospitals No. 2 and No. 9, at Coblenz, were the chief centers for medical cases, the former having in addition a contagious and a urological service. Evacuation Hospital No. 4, located in a schoolhouse on Oberwerth Island (Coblenz), had an eye, ear, nose, and throat service and a small medical service as well. Evacuation Hospital No. 14 took over the Bruderhaus Hospital, Coblenz, and later a military hospital in Ehrenbreitstein. This hospital provided neuropsychiatric and medical services and was also used as the triage to which all patients, except acute surgical and contagious cases received in Coblenz, were sent for distribution to other hospitals.²²

The second hospital center, at Trier, consisted of Evacuation Hospitals No. 3 and No. 12, the former devoted to surgical, orthopedic, eye, ear, nose, and throat, and medical cases; the latter to urological, neuropsychiatric, contagious, and medical.²³

Evacuation Hospital No. 8, in Mayen, Evacuation Hospital No. 7, in Prum, and No. 26, at Neuenahr, which served the more remote area, received all classes of cases but sent fracture and mental cases to Hospitals No. 6 and No. 14, respectively, at Coblenz.²³

The following list of evacuation hospitals with the Third Army, showing the class of cases assigned to each hospital, was published for the information and guidance of all troops, Third Army, December 23, at headquarters:²⁴

Hospital	Location	Class of cases
Evacuation Hospital:		
No. 2.....	Coblenz....	General medical; contagious; venereal; skin.
No. 4.....	do.....	General medical; eye, ear, nose, and throat; optical unit.
No. 6.....	do.....	Officers and nurses; all surgical cases draining into Coblenz; fractures; orthopedic
No. 9.....	do.....	General medical.
No. 14.....	do.....	General medical; mental; neurologic.
No. 3.....	Trier.....	Officers and nurses; all surgical cases draining into Trier; optical unit; eye, ear, nose, and throat; fractures; orthopedic; general medical; out-patient.
No. 12.....	do.....	General medical; contagious; venereal; skin; mental; neurologic.
No. 7.....	Prum.....	All classes. Mental cases will be transferred as soon as possible to Evacuation Hospital No. 12, at Trier; also such neurological cases as are severe or which resist treatment.
No. 8.....	Mayen....	All classes. Mental cases will be transferred as soon as possible to Evacuation Hospital No. 14, at Coblenz; also such neurological cases as are severe or which resist treatment.

For service to the Sixth Corps, attached to the Third Army during the first two weeks of April 1919, Evacuation Hospital No. 13 was located at Walferdange, near the city of Luxemburg, and remained attached to the army after the Sixth Corps had been disbanded. This hospital was established in a château which accommodated 150 beds, additional accommodations to a total of 500 beds being provided in tents. On account of its limited capacity this hospital operated as an evacuation hospital only, to a certain extent, sending most of its cases to the center at Trier.²³

A thoroughly equipped medical supply depot was established at Trier and a smaller one at Coblenz under the Third Army. Supplies were plentiful and of excellent quality.²³

During the march into Germany a general order was prepared, after consultation with the corps surgeons, concerning the evacuation of casualties. This was issued as General Orders No. 13, Third Army, on December 20, 1918.²⁵

I—The following is published covering care of sick and injured in Third Army.

1. *Division field hospitals.*—Buildings will be used for division field hospitals wherever possible. The location of the field hospitals will be determined by the division surgeon under the direction of the division commander.

2. Regulations governing treatment of cases in division field hospitals:

(a) Ordinary medical cases who will recover in four days will be retained and treated in division field hospitals. All seriously sick will be sent at once to the nearest evacuation hospital. In each division an experienced and competent internist will be held responsible for the proper selection of cases for retention or evacuation.

(b) No surgery will be done in division field hospitals except minor surgery, ordinary surgical dressings, and such other cases as are ordinarily treated in a dispensary. No other surgery will be attempted except in absolute emergency when the patient could not stand transportation to the nearest evacuation hospital. Cases of hernia (unless irreducible or strangulated), hemorrhoids (unless irreducible or severe), and varicocele shall not be referred for operation at this time. All fractures will be sent to an evacuation hospital for treatment.

(c) Contagious diseases: Only mumps will be retained in division field hospitals. Patients with mumps will be retained for 15 days from time of onset, or until all symptoms and signs of the disease have disappeared. All other contagious disease will be sent at once to the evacuation hospital designated for this service. The hospitals selected for this purpose will be announced later.

(d) Venereal diseases: Uncomplicated gonorrhea will be retained and treated in divisional field hospitals. Complicated cases (epidymitis, prostatic abscess, stricture, cystitis, arthritis, ophthalmia) will be sent to the nearest evacuation hospital designated for venereal diseases. Chancroids and all cases of primary syphilis or suspected primary syphilis will be sent to the nearest evacuation hospital designated for venereal disease. Other cases of syphilis, except those showing visceral or cerebrospinal lesions, will be treated in the field hospitals. The evacuation hospitals selected for venereal disease will be announced later.

(e) Skin diseases: Ordinary cases will be treated in division field hospitals. Severe or complicated cases will be sent to the nearest evacuation hospital designated for that purpose.

(f) Mental cases will be sent to the evacuation hospital designated for such cases. If such a case requires special attention en route, the hospital will be notified and will send an ambulance, with an attendant trained in the care of such cases to bring him to the hospital. Neurological cases will be sent to the hospital designated for mental cases.

3. *Corps field hospitals.*—Corps field hospitals will be used to supplement division field hospitals wherever and whenever needed. The regulations governing them will be the same as for division field hospitals. The use of corps field hospitals to establish corps collecting stations and the specific location for the same is left to the judgment of the corps surgeon under the direction of the corps commander.

4. *Evacuation.*—Ordinarily all cases should be sent to the division field hospitals. Such cases as require evacuation to an evacuation hospital will here be selected and transferred accordingly—the remainder, as noted under paragraph 2, will be retained and treated in the division field hospitals.

The following exceptions will be noted:

(a) Contagious cases except mumps will be sent direct to the appropriate evacuation hospital without passing through a division field hospital.

(b) Cases which are obviously seriously sick, and which are located in such position that evacuation by way of a field hospital will lengthen their haul, will be sent direct to the nearest evacuation hospital. This includes all fractures and acute surgical conditions.

5. Evacuation to the division field hospitals will be accomplished by the ambulance section, divisional sanitary train.

Evacuation from the divisional field hospitals to the evacuation hospital will be accomplished by the corps sanitary train. For this purpose the corps surgeon will call on the division surgeon for such assistance from the ambulance section, divisional sanitary train, as may be necessary.

Evacuation from evacuation hospitals to the replacement depot or by hospital train to the S. O. S. will be under the supervision of the commanding officer, army sanitary train, who is authorized to call on corps surgeons for such assistance in ambulances as may from time to time be required.

Some division and corps hospitals operated in the Third Army area after the troops were in position along and beyond the Rhine, but they retained only cases that could be returned to duty within a few days, with the exception of the field hospitals of the 90th Division. As this division occupied a large area, a field hospital at Cues was equipped to care for its pneumonia cases.²³

During the month of March, 1919, certain evacuation hospitals which had been longest in the American Expeditionary Forces were relieved by others which had had a shorter overseas service, as follows: Evacuation Hospital No. 2 was relieved by No. 49, No. 6 by No. 27, No. 4 by No. 22, No. 8 by No. 30, No. 7 by No. 29, No. 3 by No. 19, and No. 14 by No. 16, April 3. The retention of the former commanding officers—with one exception—and of some of the directors of the medical service promoted continuity of policy. Decrease in the size of the Third Army led to the closure, during May, 1919, of the following hospitals: Evacuation Hospitals No. 9 and No. 22, Coblenz; Evacuation Hospital No. 12, Trier; Evacuation Hospital No. 26, Neuenahr; Evacuation Hospital No. 29, Prum. The special services which these hospitals had conducted were transferred to the hospitals which were retained.²³

An epidemic of respiratory diseases which occurred during January and February, 1919, made necessary frequent evacuations to base hospitals, while the resulting congestion in hospitals of the Coblenz center was relieved by sending convalescent patients to Trier. After stabilization of the Third Army in the occupied area, patients to be evacuated to the Services of Supply were collected at hospital centers.²³

A decline in the hospital rate of admissions after the early part of March, 1919, made it possible to retain in the army area a much larger percentage of patients until they could be returned to duty or sent back to the United States, but in order to carry out this policy it proved necessary to establish convalescent sections in hospitals. One such section was organized at Evacuation Hospital No. 19, at Trier, one at Evacuation Hospital No. 9, at Coblenz, and a third at Evacuation Hospital No. 26, at Neuenahr.²³

The evacuation hospitals of the Third Army were in point of fact advanced base hospitals and at all times did advanced base hospital work.

There were 1,500 beds—operated by three evacuation hospitals—in what had previously been German military hospitals. There were 5,500 beds—belonging to four evacuation hospitals—in German kasernes (barracks). One Evacuation Hospital—No. 26, at Neuenahr—of 1,000 beds, occupied a former hotel, and former school buildings provided shelter for 1,000 other beds. Our hospitals in former German military hospitals were splendidly equipped and suitable in every way, the only drawback being that their bed capacity was small. Cooking facilities, baths, sanitary arrangements, and lighting in these institutions were excellent, and the hospitals we maintained in them were equal in every way to the best civilian hospitals in the United States. The kasernes recommended themselves for hospital use only because of their large bed capacity. They were dirty when taken over, poorly arranged for hospital purposes, cooking facilities were limited, baths were inadequate, no central heating plants were provided, and lighting arrangements were unsatisfactory; but after much work they made very acceptable institutions.¹⁹

Each evacuation hospital was directly under control of the Third Army commander, local commanders having no jurisdiction over those in their divisional areas. These hospitals were controlled by the hospitalization section of the army surgeon's office. The army surgeon had authority from his commanding general to transfer medical department personnel as he saw fit; he could promote and demote enlisted men up to and including the grade of sergeants, first class, and he was authorized to employ civilian labor. All monthly sanitary reports from evacuation hospitals were acted upon in the chief surgeon's office, Third Army, and then forwarded through the commanding general of the army to Headquarters A. E. F., for the chief surgeon, A. E. F. Disposition of all medical supplies was directed by the army surgeon. Each hospital had its own summary court and special court-martial and was authorized to issue travel orders for patients returning to duty, having practically the status of a military station. All sick and wounded records from evacuation hospitals, Third Army, were sent direct to the chief surgeon, A. E. F., at Tours, but hospital fund statements from evacuation hospitals in the army of occupation were definitely acted upon in the army surgeon's office.²⁵

The hospitalization section of that office controlled all evacuations from army hospitals and kept a daily record of all beds and of vacant beds in each hospital. It also kept a record of the hospitals receiving certain classes of cases and took proper measures to have patients classified and placed in the designated hospital. It regulated the distribution of incoming patients in such a way as to equalize the work of different hospitals, preventing overcrowding in any one hospital, and in general regulated the distribution of patients to meet any special condition. It secured orders necessary for the evacuation of patients, and in evacuations by train notified each receiving hospital of the departure of the train, the number of patients in each class—surgical, medical, mental, lying, sitting—to be evacuated to it. Every hospital kept a record of all patients evacuated, with date, destination, names, and numbers of patients evacuated, and such other data as might be necessary to

facilitate tracing outgoing patients. The hospital section familiarized itself with any conditions which would influence hospital capacity, such as ability to meet emergencies, quality of water, modification in buildings or equipment. It also kept a consolidated daily record of evacuable cases and made the necessary arrangements and reports to the regulating officer who ordered hospital trains.²⁶

To promote coordination, the army surgeon held daily informal conferences with the chiefs of the sections of his office, weekly formal conferences with all members of his staff, and weekly conferences with the corps surgeons. The object of these conferences was to learn the status of the army medical service, its needs, accomplishments, problems of mutual interest affecting different elements, and to give instructions. Corps surgeons similarly held weekly conferences with division surgeons and these, in turn, with as many of their subordinates as could be assembled. These conferences promptly secured the transmission of information in respect to the army surgeon's policies to the junior officers of the Medical Department and promoted coordination throughout. The head of the hospitalization section had weekly conferences with the commanding officers of the evacuation hospitals and made formal inspections of these as well as of division hospitals. The army surgeon's office published a weekly bulletin of communicable diseases, including venereal, and of preventable accidents, showing by graphic charts the relative standing of army, corps, and division troops.²⁶

During the first few weeks of the occupation obtaining proper food for diets for seriously sick patients proved a difficult problem. Only one evacuation hospital had a sales commissary where subsistence stores other than the ration could be secured, and advance general headquarters issued orders that no food supplies be bought from the Germans. Hospitals of the Third Army at this time contained hundreds of patients sick with pneumonia, typhoid fever, and other serious diseases, but the only food available was the straight ration. This condition had been anticipated on the march to Germany, and many earnest requests were made to the quartermaster department, Third Army, through the assistant chief of staff, G-4, to secure from the Services of Supply a sufficient stock of food suitable for diets for the use of the hospitals, but for some weeks no favorable action was taken. Many letters were written and every few days the subject was taken up with G-4, Third Army, but with no result. The response was that Tables of Organization did not call for a sales commissary for army hospitals. Finally, the American Red Cross made arrangements to purchase eggs, chickens, cereals, milk, and fruit in France to be shipped to Trier and Coblenz for the use of the sick of the Third Army, the purchase prices to be repaid to the American Red Cross by the hospitals. This plan was followed for several months with only fair success, as the American Red Cross did not have the proper organization to handle the matter consistently. The situation was of such importance that a personal appeal was made to General Headquarters for the establishment of two large hospital sales commissaries, one in Coblenz and one at Trier. After three months, authority was obtained to establish these sales commissaries, and a captain

of the Quartermaster Corps was attached to the army surgeon's office to supervise them. Personnel for their operation was obtained from various sources. These commissaries functioned exactly as did the sales commissaries of the large hospital centers.²⁷

The medical supply parks established in Coblenz and Trier were replenished on telegraphic requisitions to the Services of Supply. All requisitions from army hospitals were acted upon in the army surgeon's office and forwarded to these medical supply parks for issue.²⁸

The army sanitary trains always had available a number of evacuation ambulance companies which operated from central points in Trier and Coblenz. They provided ambulances for the hospitals in these cities, while to outlying hospitals sections of evacuation ambulance companies were assigned. The sanitary train also answered all calls from army troops.²⁸

Arrangements of all matters pertaining to railroad transportation of personnel, equipment, and supplies were handled by the transportation officer in the office of G-4, Third Army.²⁸

Every hospital was provided by the American Red Cross with a home and hospital service worker and an American Red Cross representative in charge of recreation. The former had a wide field of action, for she wrote letters for the sick and injured, attempted to trace missing soldiers, and distributed magazines, cigarettes, chocolates, etc., in the hospital wards. As some of the patients in army hospitals had not received any pay for some months and were without toilet articles, she supplied toothbrushes, tooth paste, shaving outfits, and many other necessities.²⁹

Most of the recreational facilities at the army hospitals were provided by the American Red Cross, for officers as well as for patients, nurses, and enlisted men. It was not necessary to call upon the American Red Cross for medical or surgical supplies.²⁹

THE THIRD CORPS

The Third Corps consisted of the 2d, 32d, and 42d Divisions. The 2d and the 32d Divisions started at 5.30 a. m. November 17 on their march to the Rhine. The 42d was to complete its concentration east of the Meuse and to follow the 2d Division after a few days. The movement was by two routes, the northern, followed by the 2d Division, traversing part of Belgium, and the southern, followed by the 32d Division, lying south of that country. Corps and 42d Division headquarters during the first day of the march remained unchanged in situation, but the headquarters of the 32d Division moved to Marville, and of the 2d Division to Stenay.

On the right of the Third Corps was the American Fourth Corps, composed of the 1st, 3d and 4th Divisions; on the left, the French Eleventh Corps marched with two divisions. Liaison was established with the flanking divisions of these two corps. During the first day of the march the head of the 32d Division advanced 19 km. (11.7 miles); the head of the 2d Division, about 14 km. (8.6 miles).³⁰

The 32d and 2d Divisions continued the march on November 18, reaching this day the general line Etalle—St. Leger—Ruelle—Aubange—Herserange—Audun (all inclusive). The weather continued excellent, and with good roads the day's advance was made according to schedule, all units arriving in their billeting areas before 5 p. m. The 42d Division remained in place. Headquarters of the corps opened at 5 p. m. at Longwy; headquarters of the 32d Division moved to Longwy and of the 2d Division to Virton. Heads of columns marched between 20 and 25 km. (12.4–15.5 miles).³¹

No advance was made on the 19th, the day being spent in resting and in cleaning equipment. All headquarters remained unchanged. Orders were issued for an advance movement of all three divisions on the 20th, the 42d to follow in rear of the 2d Division.³¹ During the day, some 4,000 Russians, several hundred French, and a few Italian and American released prisoners of war entered the American lines. Many were weak and sick from lack of food, and many complained of the treatment they had received while in German and Austrian hands. At Virton, there was a large German hospital containing 1,500 sick and wounded Germans, with 25 American prisoners. Women nurses, in attendance, and American soldiers stated that they had been well cared for.³¹

Large quantities of German war material of all kinds were daily received. The more important German dumps were turned over by guards of German troops who had been left behind to protect the property. Armistice terms were observed and no hostile incident was reported. There were, however, reports of pillaging by the retreating Germans.³²

The march of the three divisions of the Third Corps began on November 20 at 7.30 a. m., and the advance was made in good order and without special incident, advance divisions reaching the general line Grendel—Aultelbas—Mondercange. The 2d Division's advance was 25 km. (15.5 miles); that of the 32d Division, about 15 km. (9.3 miles). All units reached billeting areas by 6 p. m. Roads continued excellent and good weather prevailed, as was the case from the first day of the march. A certain amount of straggling was observable in the divisions, caused largely by the British field shoes which the men wore.³² There was some shortage in the supply of gasoline, due chiefly to a delay in connecting and opening up the railway system and the rapid advance of the divisions. The following changes were made in locations of headquarters: Corps, to Longwy; 32d Division, to Petange; 2d Division, to Arlon; 42d Division, to Montmedy.³² Many released prisoners of war passed through American lines during this day, chiefly French, Russians, and Italians. Almost all these men were in poor physical condition. Their mental condition seemed to be that of dull relief, with an intense desire to reach their homes.³² Large supply depots at Virton and Mousson were taken over.³²

On November 21 the three divisions again advanced, reaching at the close of the day the general line Schandel—Boevange—Bofferdange—Neuhausen. The 42d Division billeted for the night in the area St. Leger—Mussy-la-Ville—Signeulx—Harnoncourt—Robelmont. Leading elements covered 25

km. (15.5 miles). All troops made the march in good order and were in place by 4 p. m. The following changes in headquarters were made during this day: Corps, to Mamer; 32d Division, to Walferdange; 42d Division, to Brouch; 2d Division, to St. Leger.³³ Numbers of repatriated prisoners of war continued to enter American lines, including some 700 Russians.³³

All organizations of the Third Corps marched on November 22, troops arriving in place before 5 p. m. Advance units of the corps reached the general line Ingeldorf—Betzdorf, covering from 12 to 15 km. (7.4–9.3 miles). Continued good weather and the fine condition of roads aided greatly the progress of the march.³³ The following changes were made in headquarters locations during the day: Corps, to Junglingster; 32d Division, to Niederanven; 2d Division, to Mersch; 42d Division, to Arlon. Barrier posts from Florenville to Hussigny were taken over at 4 p. m. by detachments of the 42d Division, with instructions that these posts be held until relieved by troops of the lines of communications.³³

Orders were received from the Third Army headquarters that no troops be billeted in the cities of Luxemburg and Thionville and forbidding molestation of property belonging to the Grand Duchess of Luxemburg.³³

Troops of the Fourth Corps marched approximately abreast those of the Third Corps. The line of the French Eleventh Corps, on the left, was slightly behind that of the Third. Two more divisions had been ordered to join the French Eleventh Corps in the immediate future.³³

No hostile or overt acts had been experienced thus far, and all terms of the armistice apparently were observed by the retiring foe. Material turned over by him was found to be serviceable.³⁴

On November 23 all troops completed the day's march in good order by 5 p. m., the line having reached the Sauer River, which was the border. Advanced elements marched approximately 15 km. (9.3 miles). The Third Corps now remained halted for a week, awaiting further instructions before the march was resumed. The journey to the Rhine was now half completed. Corps headquarters remained at Junglinster during this halt. Changes in division headquarters were as follows: 32d Division, to Consdorf; 2d Division, to Fels; 42d Division, to Mersch.³⁴

A few prisoners of war entered our lines, and a considerable number of German ex-soldiers recently discharged and on their way to their homes in Alsace were met at examining posts. Several German deserters also were encountered.³⁴

During the time that it occupied this area the Third Corps organized an outpost line of defense along the banks of the Sauer River, slightly rearranged its units, carried on drills, training exercises, and inspections. Opportunity was given the troops to rest and to clean their equipment. So far as practicable new clothing and equipment were issued.³⁴

Released prisoners of war continued to present themselves at American examining posts and appeared to be in better mental and physical condition than those at first seen.³⁴

A detailed reconnaissance of bridges over the Sauer River was made between Weilerbach and Wasserbillig, for the purpose of determining the most practicable routes for troops on the resumption of the march.³⁵

On December 1 the first day's march through hostile territory was completed without unusual incident. The rainy weather which had prevailed during the immediately preceding occupation of Luxemburg continued, and this, with narrow roads, in poor condition, and with many steep grades, made the advance difficult and wearisome. The general line reached for the night was Lichtenborn—Lauperath—Mulbach—Idenheim and the line of the Kyll River. Leading elements of the 2d Division covered 30 km. (18.6 miles); those of the 32d Division advanced 22 km. (13.6 miles).

Headquarters of the 42d Division remained unchanged. The 32d Division headquarters moved to Welschbillig; 2d Division headquarters to Mettendorf; corps headquarters to Echternach.³⁶

The attitude of the civil population was that of curiosity and some concern, but no hostility was shown.³⁶

The march continued the following day, retarded by hilly country and by rain. The unusual narrowness of German roads caused much congestion and road blocks that with roads of the usual width could have been avoided. All units were slightly late in reaching their billeting areas, the general line for the night being Hontheim—Prum—Schonecken—Neidenbach—Mettelnich—Rievenich.³⁷ Corps headquarters remained unchanged. Changes in divisional headquarters were as follows: 32d Division, to Speicher; 2d Division, to Rittersdorf; 42d Division, to Consdorf.³⁷

The attitude and behavior of the German people in the occupied territory was all that could have been desired. They seemed favorably impressed by our well-behaved troops and by the fact that no pillaging or disorder prevailed. Their first nervous apprehension gave way to relief. All our orders were obeyed, and the best billets in the towns were turned over without hesitation to the army of occupation.³⁷

On December 3, the march was somewhat shorter than usual, and in spite of steep grades and slippery roads, all units reached their billeting areas by 3 p. m. The line for the night was Manderfeld—Olzheim—Budesheim—Salm—Eisenschmitt—Wittlich.³⁷ Changes in headquarters were as follows: Corps, to Kyllburg, 2d Division, to Prum, 42d Division, to Helenenburg (1 km. west of Welschbillig). Headquarters of 32d Division remained unchanged.³⁷

The 2d Division, on the left, renewed its march on the 4th, while the 32d Division halted and spent the day in rest and in cleaning equipment. The 42d Division also remained halted, with the exception of its artillery column, which was advanced during the day to the line Birtlinger—Masholder. The line of the 2d Division for the night was Dahlem—Oberbettingen—Gerolstein—Salm. All headquarters remained unchanged.³⁸

The character of the country through which the troops were passing became more and more rugged and roads showed no improvement. Shortage of forage, added to the difficulty of travel, made the march a trying one for artillery horses. Daily inspections of the troops en route showed marked

general improvement in march discipline and in the appearance and personal equipment of the men. Straggling had been reduced to a minimum.³⁸

Field Orders, No. 73, Third Corps, prescribing details of the march for December 5, was amended upon receipt of orders from the Third Army. The next day the 2d Division remained in place on the line Glaadt—Weidenbach and prepared to resume the march on December 6.³⁸

The 32d Division reached the line Nerdlen (exclusive)—Darscheid (exclusive)—Ellscheid—Gillenfeld, though on account of bad roads some of its organizations were forced to march 36 km. (22.3 miles).³⁸

The same day the 42d Division moved to the area Schleid—Seffern—Malberg—Orsfeld—Gindorf—Dudeldorf—Speicher—Blerdorf. Headquarters of the Third Corps and of the 2d Division were unchanged, headquarters 32d Division moved to Daun, and of the 42d Division to Speicher.³⁸

Liaison had been established with the Canadian Corps of the British Second Army, which had taken the place of the French on the left of the Third Corps.³⁹ The Fourth Corps, on the right of the Third Corps, continued its advance abreast of the latter. Its headquarters was now at Schweich.³⁹

Progress on December 6 was slow, owing to rain and poor roads, but all units reached their billeting areas by 6 p. m. Horses were in poor condition, the forage supply still being inadequate; but march discipline showed decided improvement, and the troops presented a neat and orderly appearance. The 32d Division reached the line Boos—Laubach—Driesch; headquarters at Daun.³⁹

Because of the poor roads in the southern part of the 32d Division's sector it was necessary to echelon the two leading divisions by one day's march so that the left of the 32d Division could pass over the Boxberg—Kelburg road on the 6th. The right column of the 2d Division was ordered to pass over the same road on the 7th. Line of 2d Division was Udelhoven—Ober Ehe—Dockweiler; headquarters at Gerolstein. The 42d Division occupied for the night the region Budesheim—Lissingen—St. Thomas—Feuerscheid—Schonecken and the region Manderscheid—Bettenfeld—Eisenschmitt—Oberkail. Headquarters were at Birresborn. Corps headquarters remained at Kyllburg. Both adjacent corps continued their advance in conjunction with the Third Corps.³⁹

It was reported that the larger part of the enemy retiring forces had crossed the Rhine.³⁹

The day's march of December 7 was completed by all units in good condition, though the scarcity of roads in the region traversed, and their poor condition, somewhat delayed the progress of most columns. The army line was reached by the 32d Division: Ettringen—Mayen—Greimersburg, with headquarters at Mullenbach. The 2d Division reached the line Rupperath—Gilgenbach—Drees, with headquarters at Nohn. Advance columns of the 42d Division halted on line Feusdorf—Birgel—Pelm, headquarters remaining at Birresborn. Third Corps headquarters moved to Daun at 3 p. m. Both front-line divisions advanced about 23 km. (13.8 miles).⁴⁰

Having reached the army line, the 32d Division remained halted during December 8, while the 2d Division marched to the line Meckenheim—Ahrweiler—Kempnich—Ettringen, the 42d Division assembling its elements in

the zone Udelhoven—Boxberg—Wallenborn—Glaadt. Advance cavalry patrols from Troop I, 2d Cavalry, sent out to reconnoiter the Rhine from Remagen to Sinzig, reported the Remagen bridge blocked with cars of coal and stone. These were the first organized detachments of American troops to reach the Rhine.⁴⁰

Headquarters of the corps and 32d Division remained unchanged. Headquarters of the 2d Division moved to Adenau; 42d Division headquarters to Dreis.⁴⁰

From this time the entire 2d Division was obliged to march on the one road through the Ahr Valley.⁴⁰

On December 9, the three divisions renewed the march, which was made easier by the less rugged character of the country, and by the better roads which characterized the Rhine valley. Lines reached were as follows: 32d Division, eastern edge of Laacher See—Kerben—Munstermaifeld, headquarters at Mayen; 2d Division, Rhine River from Rolandseck to Brohl—eastern edge of Laacher See, headquarters at Ahrweiler; 42d Division, line Dumpelfeld—Adenau—Boos, headquarters at Adenau.⁴¹

The next day the two advance divisions only continued the march. For the 2d Division it was necessary only to swing its right flank forward, thus bringing its advance elements on the line of the Rhine along the entire divisional front from Rolandseck to Andernach (exclusive). Headquarters of the 2d Division was unchanged. The extreme left flank of the 32d Division reached the river, its line for the night being Andernach—Winningen. Headquarters of this division moved to Ochtendung. The 42d Division remained in place. Corps headquarters moved to Polch.⁴¹

At the end of December 11, troops of the Third Corps everywhere along the corps front had reached the Rhine, there to remain halted until further instructions were received from the Third Army.⁴¹

Only a short advance had to be made by the 32d Division to bring its forward elements along the line of the Rhine, from Andernach (inclusive) to the Moselle River. This movement, and the change of divisional headquarters to Bassenheim, was completed by 12 noon. The 2d and 42d Divisions made no other movement than some slight readjustments of units in preparation for starting to cross the Rhine. The day was spent in a general cleaning of clothing and equipment and in rest.⁴¹

During December 12, all troops of the Third Corps remained in place. The Third Corps was designated as the only corps of the army of occupation to cross the Rhine and establish itself in the Coblenz bridgehead area, with headquarters at Neuwied. Only the northern sector of the bridgehead, the southern boundary including Coblenz—Gackenbach and Gorgeshausen, was to be occupied by American troops; the southern sector was to be held by the French. The Fourth Corps was to remain in close support, north of the Moselle, and the Seventh Corps on the line Gerolstein—Wittlich—Berncastel. Headquarters were to be as follows: Third Army, Coblenz; Third Corps, Neuwied; Fourth Corps, Cochem; Seventh Corps, Wittlich.⁴²

Field Orders No. 80 was issued, defining the "Plan of action, Third Army Corps." Instructions were received from the army that the 1st Division

would pass under the command of the Third Corps at 6 a. m. on December 13, and that on the same date and hour the 42d Division would pass to the command of the Fourth Corps.⁴²

All three divisions began to cross the Rhine at 7 a. m. of the 13th. The 1st Division, on the right, utilized the pontoon bridge at Coblenz. The 32d Division crossed on the Engers bridge and also used the ferry at Neuwied. The 2d Division, on the left, passed over the bridge at Remagen and the ferry at Andernach.⁴²

Without exception, all crossings were effected in a smooth and orderly manner, due largely to the excellent road discipline which prevailed. The fine appearance of men, equipment, and material elicited the highest praise from all who reviewed the passage.⁴²

By nightfall all organizations, with the exception of divisional trains, special units, and corps troops, had crossed the Rhine and were well into the bridgehead area. Corps headquarters remained at Polch. Headquarters of the 1st Division moved from Coblenz to Montabaur; the 32d Division to Sayn; and the 2d Division to Heddesdorf.⁴²

The Third Corps held the north sector of the bridgehead, with the 1st Division (on the right) and the 32d Division (left) in the front line and the 2d Division in support. The mission of the corps was to hold itself in readiness for aggressive offensive action in case of a resumption of hostilities, in which case it was to cover the crossing of the Rhine by troops of the Fourth Corps. The ground was to be organized in three positions, consisting of an outpost, a second or main position of resistance, and a third position, with switch positions on the left for the purpose of connecting with the British in the event hostilities were resumed.⁴²

On December 14 further advance into the bridgehead area was continued by the divisions. At the close of this day practically all troops of the Third Corps were across the Rhine. At 7 p. m. all units of the 1st and 2d Divisions were reported in their billeting areas, while the 32d Division still had a short distance to march before the most advanced elements would arrive in place. No change occurred in divisional headquarters. The Fourth Corps began this day its movement into the new area as support to the Third Corps, headquarters remaining at Cochem. Troops of the Canadian Corps, on the American left, were in place in the Cologne bridgehead, with corps headquarters at Bonn.⁴²

By nightfall of December 15 the 32d Division had completed the short march necessary to place its troops on the perimeter of the bridgehead, while all corps troops and divisional special units had arrived in their permanent billeting areas. Corps headquarters was established at Neuwied, and Third Army headquarters opened at Coblenz.⁴³

The march of the Third Corps, the advance section of the American army of occupation, to the Rhine River and into Coblenz bridgehead was now completed, after covering approximately 300 km. (186 miles) in 16 marching days. The strength of the corps on this date was 3,261 officers and 79,514 men.⁴³

MEDICAL DEPARTMENT ACTIVITIES

On November 18 the corps surgeon's office moved to Longuyon, remaining there until the 20th. Divisional triages were concentrated at Dun-sur-Meuse, evacuating to Evacuation Hospital No. 15, at Glorieux.⁴⁴ An army medical officer was sent forward, by arrangement with the armistice commission, to Luxemburg, Trier, and Coblenz to reconnoiter hospitalization resources for the Third Army, but as it proved the Third Corps obtained little in the way of army hospitalization or evacuation until it entered the Rhine Valley.⁴⁵

The divisions established their triages at favorable points at each stage of the march and evacuated to the corps collecting hospitals, whence evacuations were made by corps ambulances to the evacuation hospitals which remained as located for the last phase of the Meuse-Argonne operation. Both the corps and divisions utilized the system of "leapfrogging" developed during the offensives in which they had participated, but the absence of army hospitals near the troops was at first a source of considerable difficulty. Later the Third Army established evacuation hospitals at the more favorable sites of the corps collecting hospitals, and these, in turn, were located at the triage points of either the northern or the southern division in the corps front.⁴⁵

At the beginning of the march out troops were faced by the need of providing for refugees, and corps hospitals participated in the care given them. One of the hospitals of the 32d Division at Longwy cared for many hundreds until relieved by a corps hospital, which was also the collecting point for American disabled in that vicinity.⁴⁵

The evacuation order issued by the Corps on November 16, covering the first portion of the march to the Rhine, read as follows: ⁴⁵

Each division will establish its own triages within its area and evacuate as follows:

Surgical cases; very seriously sick: Mobile Hospital No. 1, Bantheville.

Moderately sick: Evacuation Hospital No. 15, Glorieux.

Slightly sick: Evacuation Hospital No. 4, Fromereville.

Contagious: Evacuation Hospital No. 8, Petit Maujouy.

Nervous: Psychopathic Hospital No. 1, Benoite Vaux.

Changes in evacuation will be announced in orders from time to time. When evacuation by train is possible, the corps will maintain a collecting hospital at railheads.

Additional ambulance or hospital service will be furnished on request to corps surgeon.

Each division will make proper provision for ambulances to march in rear of the columns to take care of the sick and footsore.⁴⁶

After the front lines of the divisions reached the German frontier they retained that position until December 1. Meantime the corps hospital at Longwy was ordered to Echternach in time to serve troops after the march was resumed, so that it received patients during the first three days of December. On December 4 the following evacuation order was published: ⁴⁷

Divisions will establish triages within their own areas, and such number of field hospitals, at least one, as will accommodate the sick who are apt to return to duty within three or four days.

All contagious cases, including influenza, all surgical cases, except the very slight ones apt to recover within three or four days and all other cases not apt to return to duty within three or four days, will be evacuated by divisions to the 3d Corps collecting hospital at Echternach.

The corps collecting hospital will be moved forward at a date to be announced later.

The sanitary train, which had had its headquarters at Mont St. Martin, just outside of Longwy, and later at Steinsel in Luxemburg, now moved to Echternacherbruck, crossing into Germany as soon as the troops had advanced. While the corps collecting hospital remained at Echternach, the divisional triages followed the troops closely, establishing temporary collecting points. For example, the 32d Division had such a formation at Daum, and the 2d Division a more elaborate one at Prum.⁴⁷

When the advance had gone far enough the corps collecting hospital was established at Prum, where it took over the building by the triage of the 2d Division, and the headquarters of the Third Corps Sanitary Train was moved from Echternacherbruck to the same place. When the 2d Division moved forward to another triage the corps collecting hospital took over all its patients and established a hospital of about 1,000 beds which served the corps until the line had nearly or quite reached the Rhine. Thereafter, until army hospitals were established in the bridgehead area, patients were evacuated to Trier. In the last days of the march, the Third Army evacuated the corps hospital at Prum by a hospital train, but in the meantime it had been partially evacuated by the Third Corps ambulance section, which later assisted in evacuating the hospital at Trier.⁴⁸

After corps headquarters was officially opened at Neuwied, in the bridgehead area east of the Rhine, on December 15, corps hospitals were soon opened in the same area. For the northern part of the bridgehead, Neuwied was selected as the best location for a corps collection hospital, and for the southern part, Ehrenbreitstein. Good buildings were obtained for both of these institutions, and they were established at once, but were not completely manned until after the army took over the hospital at Prum, thus releasing field hospital personnel of the corps stationed at that place.⁴⁸ For a few days in the early period of occupation, the 32d Division, with a triage at Andernach, and the 2d Division, with a triage at Neuenahr, assisted the corps by retaining and caring for large number of the sick.⁴⁹

When the Third Army began to receive patients in Coblenz some changes took place in the distribution of corps medical organizations. The 1st Division maintained its triage and hospital at Dernbach, while the 32d Division had its triage at Sayn and its hospital in a summer hotel at Rengsdorf, the 2d Division placing its triage at Engers and its hospital at Vallendar. The corps collecting hospital at Ehrenbreitstein was taken over by a hospital of the Third Army, but the corps continued to maintain its hospital at Neuwied, chiefly for the reception of sick from among corps troops. The sanitary train was established in one of the modern fortifications on the heights of Ehrenbreitstein. An army evacuation order was issued which in effect sent patients direct from the divisions to army hospitals, and in consequence corps collect-

ing hospitals practically ceased to function. The officer in charge of evacuation for the Third Army was directed to consult directly with the corresponding officer in the corps. The functions of the corps surgeon, already reduced, were thus further limited.⁴⁹

THE 2D DIVISION

In preparation for its march, 11 additional trucks and 25 G. M. C. ambulances were received by the sanitary train of the 2d Division. Animal-drawn ambulances were assigned to follow each column, and motor ambulance details called twice daily at all elements of the division, evacuating patients to division field hospitals and from the latter to corps hospitals. During a part of the march convoys of motor ambulances were detailed also to follow up the column and carry forward to their organizations men who fell out or straggled.⁵⁰

Hospitalization was provided by sending with the advance a part of the 1st Field Hospital, which would establish itself as far forward as the day's march permitted, while the other part of this unit cared for the disabled who were left behind, until they were evacuated. The latter then moved up and took over the hospital which had already been established by the former. On a few occasions, when evacuations to the rear were long and difficult, other field hospitals relieved the one mentioned, or another field hospital was established to assist it. A section of the medical supply unit accompanied the advance field hospital to meet its needs and those of the Medical Department detachments with troops.⁵⁰

Hospitals were established as follows on the line of march:

Place	Date	Organization	Number of patients
Chauvency-le-Chateau, Meuse.....	Nov. 17-Nov. 18.....	1st Field Hospital.....	40
Virton, Belgium.....	Nov. 19-Nov. 20.....	do.....	54
Arlon, Belgium.....	Nov. 20-Nov. 22.....	do.....	130
Mersch, Luxemburg.....	Nov. 22-Nov. 23.....	do.....	50
Cruchten, Luxemburg.....	Nov. 23-Dec. 1.....	do.....	450
Fischbach, Luxemburg.....	Nov. 25-Dec. 7.....	23d Field Hospital.....	^a 21
Oberweiss, Rhine Province, Germany.....	Dec. 3-Dec. 5.....	16th Field Hospital.....	180
Gerolstein, Rhine Province, Germany.....	Dec. 3-Dec. 10.....	1st Field Hospital.....	130
Prum, Rhine Province, Germany.....	Dec. 4-Dec. 9.....	15th Field Hospital.....	413
Adenau, Rhine Province, Germany.....	Dec. 8-Dec. 10.....	16th Field Hospital.....	132
Neuenahr, Rhine Province, Germany.....	Dec. 10-Dec. 14.....	15th Field Hospital.....	343
Neuenahr, Rhine Province, Germany.....	Dec. 15-Dec. 19.....	16th Field Hospital.....	^b 5
Engers, Rhine Province, Germany.....	Dec. 14-Dec. 31.....	1st Field Hospital.....	880
Bendorf, Rhine Province, Germany.....	Dec. 15-Dec. 31.....	15th Field Hospital.....	140
Engers, Rhine Province, Germany.....	Dec. 27-Dec. 31.....	16th Field Hospital.....	24
			2,152

^a Admissions in addition to those transferred from 1st Field Hospital, at Cruchten, on departure of the latter.

^b Admissions in addition to 349 transferred from 15th Field Hospital, at same place, on departure of the latter.

On the 25th of November, at Cruchten, Luxemburg, 24 Ford ambulances were received, but on the 28th all surplus ambulances were ordered turned in and a convoy of G. M. C. ambulances and 8 of these new Ford ambulances were sent back to the Medical Department concentration area at Joinville, Haute-Marne, France. This left ambulance strength of the ambulance section

as follows: 11 animal-drawn ambulances and 16 Fords to 16th Ambulance Company, and 12 G. M. C. ambulances to each of the other three companies, 1st, 15th, and 23d.⁵⁰

THE 32D DIVISION

On cessation of hostilities the entire 32d Division was transferred across the Meuse and replacements were received, including both medical and dental officers. The sanitary train turned in Peerless trucks, which were replaced by Packards. Animal-drawn units were motorized. New clothing and, in so far as practicable, new shoes were issued throughout the division, but the supply of the latter was insufficient. On November 19, when the division started on its march to the Rhine, ambulances followed each infantry column, field hospitals opening for the reception of patients. At Longwy, Field Hospital No. 127 was established to care for some 250 sick and wounded found there, of whom 8 were Americans. Later this hospital transferred its patients to the sanitary train of the Third Corps. During the march Field Hospital No. 125 established at Noers, Daun, and Andernach; Field Hospital No. 126 at Dun-sur-Meuse, Minden, and Andernach; Field Hospital No. 127 at Longwy, Walferdange, Nieder Mendig, and Rengsdorf; Field Hospital No. 128 at Dudeldorf and Sayn.⁵¹

The chief difficulty which the Medical Department experienced on this march was that of moving the field hospitals forward to keep pace with the advance, transportation available having been reduced to two-thirds of the regulation quota. About every second day a hospital would be opened at a new location, and as soon as it could be cleared by corps hospitals, acting as evacuation hospitals, trucks were sent back to move it forward. The amount and character of work which the field hospitals were called upon to perform were considerably heavier than was provided for in their Tables of Organization and Equipment. The problem of rationing these hospitals, which sometimes were scattered over a route 100 km. (62 miles) in length, was very difficult.⁵²

Evacuation to corps collecting stations was effected by division ambulances. There was some sickness, particularly among unseasoned recruits, but most cases were admitted for treatment on account of sore, bruised, or lacerated feet—conditions attributed chiefly to an insufficient supply of good shoes. Three men per thousand were evacuated from the division. On December 13, when the 32d Division crossed the Rhine, Field Hospital No. 128—later supplemented by Field Hospital No. 126—was established in two hotels at Sayn, which town later became the billeting area of the entire sanitary train. These hospitals here received patients from the area of the 64th Brigade, while Field Hospital No. 127, at Rengsdorf, performed a similar service for the 63d Brigade.⁵¹

THE 42D DIVISION

In this division, in preparation for the march to the Rhine, one motor and two animal-drawn ambulances were assigned to each Infantry regiment, one of each to every Artillery regiment, and one motor ambulance to each

Machine Gun Battalion, to the Artillery brigade headquarters, and to the division surgeon's office. A liaison officer was assigned to each Infantry regiment and to the Artillery brigade.⁵³ Working in close cooperation and using the "leapfrog" system, the units of the sanitary train furnished, during each day's march and at its end, collecting points for the disabled from all parts of the division. A field hospital and an ambulance company constituted a team, the former housing and treating patients until the latter had cleared the particular area concerned and completed evacuations to the rear. The team then moved forward, overtook the division, and in its turn again opened a division triage. Thus at the end of each day's march a hospital was found receiving patients who should be evacuated and an ambulance company supplementing as needed the ambulances assigned to the troops.⁵⁴

Though the plan worked well, its actual operation required unremitting attention. In many instances the distance to evacuation hospitals was considerable, and distribution of rations was difficult when the four evacuating teams were scattered (each an ambulance company and a field hospital) from 30 to 50 km. (18 to 31 miles) apart. After the division reached Mersch only hospital cases were evacuated, men with minor ailments being carried forward by truck or ambulance. By this means more than 1,400 men were retained with the troops, while a total of 1,000 were evacuated.⁵⁴

On December 15 the sanitary train, less one field hospital and one ambulance company which had been left at Adenau to care for a small group of desperately sick patients, had reached its destination at the Kreis of Arhweiler, on the Rhine.⁵⁵

THE FOURTH CORPS

Headquarters of the Fourth Corps, now a part of the Third Army, moved to Buxerulles in anticipation of the move into Germany, and the composition of the corps was changed so that it now consisted of the 1st, 3d, and 4th Divisions. Field Orders, No. 66, Fourth Corps, issued on November 16, directed the 3d Division to enter No Man's Land at 5.30 a. m. on the 17th on the two roads: Charey—Chambley and Woel—Latour-en-Woevre—Friaucourt, to the line Jarny—Conflans—Abbeville; the 1st Division to enter No Man's Land at 5.30 a. m., marching via Moranville—Warcq—Rouvres and Abaucourt—Etain, to occupy the line Gondrecourt—Domremy-la-Canne; the 4th Division to march on the Bernecourt—Thiaucourt—Gironville—Vigneulles-les-Hattonchatel, to Thiaucourt and Vigneulles-les-Hattonchatel, and corps troops to be ready to follow on short notice. Designated places were reached, as directed, on the same day. Corps headquarters was at Woinville on the night of November 16–17. That of the 1st Division, at Le Cabaret Ferme; of the 3d Division, at St. Maurice; and of the 4th Division, at Boucq.⁵⁶

On the night of November 17–18 corps headquarters was still at Woinville; 1st Division, Etain; 3d Division, Conflans; 4th Division, Boucq.⁵⁶

Divisions marched prepared at all times to resume the offensive upon receipt of orders to do so. After this date, corps troops were moved and stationed according to the uses to be made of them.⁵⁶

On November 18 the Fourth Corps occupied the line Ste. Marie-aux-Chenes—Briey—Audun-le-Roman—Fillieres; the 3d Division marching via Jarny—Auboue and Conflans—Briey; the 1st Division marching via Landres—Audun-le-Roman and Norroy-le-Sec—Sancy; the 4th Division remaining in its billeting area prepared to march, and the corps troops marching on the roads between the two leading divisions.⁵⁶ Corps headquarters moved to Etain at 10 a. m. Headquarters of the division was at Landres; no change in location of 3d and 4th division headquarters.⁵⁶

On November 19 the Fourth Corps was halted, headquarters at Joppecourt; no change in headquarters of 1st, 3d, or 4th Divisions. On the 20th the corps advanced to the line Gandrigen—Hayingen—Angevillers—Wollmeringen—Mondercange, corps headquarters at Joppecourt, division headquarters as follows: 1st, Audun-le-Tiche; 3d, Moyeuve; 4th, Thiaucourt.⁵⁷

Next day the corps continued its advance to the line Cattenom—Breistroff la Grande—Rentgen-Basse—Freische—Aspelt—Dahleim—Moutfort—Schuttrange, with its leading divisions, and the 4th Division occupied the line Batilly-Hatriz—Ozerailles. Corps headquarters remained at Joppecourt, those of the divisions as follows: 1st, Hesperange; 3d, La Grange St. Francois; 4th Division, Conflans.⁵⁷

On the 22d of November the leading divisions occupied the line Schengen—Remerschen—Remich—Stadtbredimus—Greiwdange—Wormeldange—Flaxweiler—Betzdorf, and the 4th Division occupied the line Gandringen—Hayingen—Algringen.

A safety zone of approximately 10 km. (6.2 miles) was maintained between advance elements and the German rear elements. Headquarters of the corps was at Bettembourg; 1st Division at Canach, 3d at Fixem, and 4th at Briey.⁵⁷

On the 23d the 3d Division remained in place, the 1st occupied the line Ahn—Machtum—Grevenmacher—Mertert—Wasserbillig (exclusive), and the 4th Division marched to the line Garsch—Gr. Hettingen—Otringen (all inclusive). Headquarters of the corps was at Hesperange, of the 1st Division at Canach, the 3d at Remich, and the 4th at Hayingen.⁵⁷

From November 24 to 30, inclusive, the corps was halted on the west bank of the Moselle River, with headquarters at the following places: Corps, Hesperange; 1st Division, Canach; 3d Division, Remich; 4th Division, Hayingen.⁵⁷

At 8 a. m. on December 1 the Fourth Corps crossed the German frontier. The 1st Division utilized bridges at Wormeldange and Grevenmacher over the Moselle, at Wasserbillig over the Sauer, and at Konz and Wiltigen over the Saar, and occupied the line Schoden (exclusive)—northern outskirts of Trier (exclusive)—Steigenberg Hill. The 3d Division utilized the bridges at Schengen and Remich and occupied the line Hill 440, 1 km. (0.6 mile) southeast of Traben—east bank of Saar—Schoden. The 4th Division prepared to follow the 3d, but made no change. Headquarters of the corps was at Grevenmacher, that of the 1st Division at Konz, of the 3d Division at Saarburg, with no change in 4th Division.⁵⁸

On December 2 the 1st Division occupied the line Waldrach (exclusive)—Riol—Hetzerath (inclusive); and 3d Division the line taking in Hill 659—Ruwer Creek to Waldrach (inclusive); the 4th Division cleared the line Diedenhofen (exclusive)—Gr. Hettingen—Suftgen—Bettembourg. Headquarters were as follows: Corps, Grevenmacher; 1st Division, Schweich; 3d Division, no change; 4th Division, Remich.⁵⁸

Next day the 1st Division occupied the line Heidenburg (inclusive)—Minheim—Osann—Platten—Wittlich (inclusive); the 3d Division occupied the line Grimburgenhof—Heidenburg (exclusive), and the 4th Division cleared the line Fixem—Mondorf—Schuttrange and prepared to cross the Saar at Saarburg, Wiltingen, and Konz. Headquarters were located as follows: Corps, Schweich; 1st Division, Hetzerath; 3d Division, Osburg; 4th Division, Remich.⁵⁸

On December 4 the corps continued its advance astride the Moselle, the 1st Division occupied the line Gornhausen (exclusive)—Berncastel—Wittlich; the 3d Division occupied the line Nonnweiler—Deuselbach—Gornhausen (inclusive), and the 4th Division moved to the line Nieder-Zerf—west bank of the Ruwer, clearing the line of the Moselle, using the bridges at Schengen, Remich, and Wormeldange. Headquarters as follows: Corps, Schweich; 1st Division, Hetzerath; 3d Division, Osburg; 4th Division, Saarburg.⁵⁸

On December 5 the 1st Division occupied the line Raversbeuren (exclusive)—Enkirch—Bengel—Scheidweiler—Wallscheid; the 3d Division occupied the line Ringel-Kpf—Raversbeuren (inclusive), and the 4th Division moved to the line Waldweiler—Kell—Farschweiler—Riol (all inclusive). Headquarters were as follows: Corps, Schweich; 1st Division, Wittlich; 3d Division, Morbach; 4th Division, Pellingen.⁵⁹

Next day the 1st Division occupied the line Hesweiler (exclusive)—Senheim—Brenn—Driesch; the 3d Division occupied the line Hausen—Todenroth—Hesweiler (inclusive), and the 4th Division moved to the line Nonnweiler—Thalfang—Mulheim—Osann. Headquarters of the corps was at Schweich; of the 1st Division at Alf, 3d Division at Morbach, 4th Division at Osburg.⁵⁹

On December 7 the 1st Division occupied the line Morsdorf—Klotten—Landkern; the 3d Division the line Kellenbach—Simmern—Bell—Morsdorf (exclusive), and the 4th Division occupied the line Allenbach—Sensweiler—Lotzbeuren—Traven—Kinderbeuren. Headquarters of the corps was at Zell, of the 1st Division at Alf, 3d Division at Kirchberg, and of the 4th Division at Cues. On the 8th the corps remained halted and headquarters unchanged.⁵⁹

December 9 the 1st Division occupied the line Liesenfeld—Burgen—Gapenach; the 3d Division occupied the line Rheinbollen—Liesenfeld (exclusive), and the 4th Division moved to the line Rhaunen—Oberkostenz—Schauren—Zell—Beuren. Headquarters were as follows: Corps, Cochem; 1st Division, Treis; 3d Division, Simmern; 4th Division, Cues.⁵⁹

Next day the 1st Division occupied the line Boppard—Waldesch—Winningen (exclusive), the 3d Division the left bank of the Rhine to Boppard (exclusive), and the 4th moved to the line Mengerschied—Simmern—Mors-

dorf—Klotten (exclusive). Headquarters were: Corps, Cochem; 1st Division, Treis; 3d Division, Rheinbollen; 4th Division, Kirchberg.⁵⁹

On the 11th the 1st Division occupied the line of the Rhine to Coblenz (exclusive), the 3d Division made no change, and the 4th remained as on the preceding day. No change was made in headquarters. Next day the 1st Division passed to the Third Corps and the 42d was transferred to the Fourth Corps. Corps dispositions remained unchanged.⁶⁰

On the 13th, on account of changes in the southern boundary of the Third Army and the Fourth Corps area, the corps was assigned a position west of the Rhine and north of the Moselle. The 3d Division prepared to march via Boppard—Coblenz, to occupy the Kreis of Mayen, using the bridge at Treis in part. The 4th Division marched via the bridges at Treis and Bullay to occupy the Kreises of Cochem and Adenau. The 42d Division prepared to occupy the Kreis of Ahrweiler. No change was made in headquarters of the corps nor of the 3d and 42d Divisions; 4th Division headquarters was at Alf.⁶⁰

On the 14th the corps continued the movement to occupy areas assigned to the divisions. The 3d Division remained halted, as did the 4th. The 42d occupied a portion of the Kreis of Ahrweiler. Headquarters of the corps and of the 3d Divisions remained unchanged. Headquarters of the 4th Division was at Alf and of the 42d at Adenau and Ahrweiler.⁶⁰

On December 15 the Fourth Corps continued the movement. The 3d Division marched via Coblenz and the 4th marched to occupy its area. The 42d Division completed the occupation of the Kreis of Ahrweiler. Corps headquarters was not changed. Division headquarters were as follows: 3d, Boppard; 4th, Bertrich; 42d, Ahrweiler.⁶⁰

The corps continued its movement next day, but headquarters remained as on the preceding days. Headquarters of the 3d Division was at Andernach, 4th Division at Bertlich, and 42d Division headquarters remained at Ahrweiler.⁶⁰

The corps completed the movement on December 17 when divisions were all placed in their areas. Corps headquarters remained at Cochem, the 3d Division at Andernach, 4th at Bertrich, and the 42d at Ahrweiler.⁶¹

MEDICAL DEPARTMENT ACTIVITIES

The corps was supplied with a corps sanitary train whose personnel and field hospital equipment were drawn from the 76th Division and the ambulances and trucks from various near-by divisions which did not participate in the march. By working day and night, the personnel overhauled these vehicles and put them into condition within two days, so that they were ready for use on the day that the march began. For the most part the corps train moved as a unit, such ambulances as were necessary being detached to accompany various corps organizations.⁶²

As no buildings were left standing in the territory first traversed, the problems of hospitalization and evacuation of the sick presented difficulties. The 1st Division, which came from the Argonne region by way of Longwy and Longuyon, joined the corps on the march, evacuating its ineffectives to

the hospitals already established in the region it was leaving, which was still operating under the First Army. During the first two days of the march the sick of the 3d and 4th Divisions had to be transported back over No Man's Land to a receiving hospital moved forward for that purpose by the Second Army. This was in the region of Mars-la-Tour, to which point the division ambulance companies transported these patients. Thence they were carried by the Second Army to hospitals in the environs of Toul.⁶²

During the early part of the march no attempt was made to establish corps hospitals, but as it progressed two of these hospitals were established at Jarny in school buildings. They operated here for two days, but were more concerned in feeding stragglers and such troops as had failed to get their rations than in actual care of the sick. After this evacuation was still to the rear, across the devastated region, even though the haul was becoming a long one. It having been learned that some American wounded prisoners had been left in Briey, a corps hospital and corps ambulance company were sent forward to that town, where the former took over a well-equipped and modern civil hospital which had been used as a military hospital by the Germans. A number of nontransportable wounded were found, including some Americans, but most of the patients here were Germans or Austrians. One German medical officer and a few sanitary corps men had been left behind to look after them, but only three days' supply of poor food had been left when the Germans evacuated the hospital, and this was entirely exhausted when the Fourth Corps sanitary formations took it over. The hospital continued to operate at Briey under the same jurisdiction until relief was provided by an evacuation hospital of the Third Army.⁶²

Patients in the corps field hospitals at Jarny having been evacuated, these two units were moved forward and established in Esch, Luxemburg, where excellent school buildings, well adapted to hospital purposes, were found. The 4th Field Hospital of the corps sanitary train took over the location of a field hospital established in Esch by the 1st Division, relieving the latter for forward movement.⁶²

Until the troops reached Luxemburg the weather had been excellent, there had been no great amount of sickness, and the march had continued daily. During a rest period of some eight days in that duchy, the weather turned cold and rainy, and influenza cases complicated by pneumonia increased so that the hospitals in Esch were taxed to capacity. Now, evacuation to France and rear areas by ambulance had to be abandoned and evacuation to forward occupied areas begun, since it was necessary for its hospitals to stay within the corps area as it advanced.⁶³

The march having been resumed on December 1, the corps hospital which had been relieved at Briey took over the site of the field hospital of the 1st Division at Grevenmacher. Two of three corps hospitals at Esch also moved forward at once and occupied large barracks of good capacity in Trier, establishing themselves at once for the reception of such patients as could bear transportation from Esch forward. (Patients with influenza were evacuated, but those with pneumonia were held.) At the time these patients

were being received, Evacuation Hospitals No. 3 and No. 12 arrived and took over the hospitals established in Trier; but as only part of their personnel and none of their equipment came with them the corps hospitals were left in situ and operated under direction of their commanding officers, pending the arrival of the full equipment of the evacuation hospitals. The corps hospital in Grevenmacher was also evacuated and moved to occupy a hotel building near Traben-Trarbach, on the eastern bank of the Moselle. The latter was operated for some time, caring especially for influenza and pneumonia patients whose evacuation was deemed inadvisable.⁶³

Upon resumption of the march from the Duchy of Luxemburg into Germany proper, foot trouble among Infantry troops began to assume formidable proportions. This was due not to the long-continued marching, but chiefly to improperly fitting shoes. The majority of the soldiers had been issued the British army shoe, which was heavier, built on different lines, and made of less pliable leather than the American shoe. A great many of the troops fell out on the line of march because of blistered and excoriated feet. Though of only temporary character, this disability threw a great burden on ambulance companies and accounted for an increased sick rate. Influenza, which had appeared while the troops were at rest, continued, but to a lesser extent. Foot troubles and influenza caused practically all the disabilities toward the end of the march.⁶³

The area assigned the Third Army, extending along the western bank of the Rhine, joined the British sector to the north and the French to the south and extended back in the occupied territory some 80 km. (50 miles). The 1st Division, which had been part of the Fourth Corps on the march, passed to the Third Corps, its place in the Fourth being taken by the 42d Division, which held the northern portion of the sector, the 3d Division the southern portion, and the 4th Division the back area. Corps headquarters was placed at Cochem and there remained.⁶³ Division field hospitals were located at the places most advantageous for service of the division areas concerned, and corps hospitals were distributed so as best to serve the divisions as entities—one at Cochem, one near Mayen, one at Andernach, and one at Neuenahr. The hospital at Neuenahr was relieved later by an evacuation hospital of the Third Army, and was then moved to Andernach.⁶³

After reaching Cochem, the corps ambulance companies were reinforced by 36 Ford ambulances, thus securing ample ambulance transport to the corps. Extra corps ambulances were stationed at the various division hospitals to evacuate patients to corps hospitals. From the latter, such patients as evidently required hospitalization for a period longer than four to seven days, in accordance with instructions from the chief surgeon, Third Army, were evacuated to evacuation hospitals of the Third Army, where definitive treatment was given them.⁶⁴

THE 1ST DIVISION

On November 17, as part of the Fourth Corps, the 1st Division started on its march to the Rhine after an unsuccessful attempt to reequip the troops.

Its troops started on the march thinly clad, poorly shod, and without having had an opportunity to bathe or disinfect themselves. Notwithstanding these conditions, however, the number of men requiring hospitalization was small.⁶⁵

When the division assembled after the last offensive it was only with the greatest difficulty that the sanitary train was able to extricate its transportation from mired roads and to reach division headquarters at La Cabaret Ferme in the area east of Verdun. Men reporting sick were picked up by battalion or regimental medical personnel and evacuated as was necessary to Evacuation Hospital No. 15, at Glorieux, just west of Verdun. An ambulance was attached to each regiment to care for emergency cases, and other ambulances visited each battalion and regimental station to evacuate the sick.⁶⁵

The command reached the Duchy of Luxemburg November 20, and Field Hospital No. 3 operated as a division hospital at Esch until the 25th. Nearly all the 295 patients it here received were suffering from foot trouble caused by improper shoes.⁶⁵ In a few days most of these men were returned to the lines, but seriously sick patients were transferred to the Third Corps hospital, also located at Esch. The division remained in Luxemburg until December 1, billeted, as a rule, in barns, but enjoying bathing facilities adequate to give all men at least one bath. There were no facilities for disinfestation, however, and almost every member of the command harbored vermin. Field Hospital No. 2, established at Grevenmacher, admitted 534 patients up to December 1, most of them because of foot troubles. More than half the cases of disability during the march were due to this cause.⁶⁶ After the division reached Coblenz December 12 and deployed through the area beyond the bridgehead, the sanitary train was billeted first at Hoehr and then at Hilschied, serving at the latter location until the division was withdrawn. The division surgeon's office was located at division headquarters in Montabaur. Field Hospital No. 3 occupied a part of a German hospital building at Dernbach, where it functioned as a division hospital until March 5, on which date it was relieved by Field Hospital No. 2. From December 15, 1918, to March 15, 1919, 2,042 patients were received. Corps orders directed that patients who did not recover in three days be evacuated to the corps hospital at Neuwied.⁶⁷

THE 3D DIVISION

The 3d Division started on its march to the Rhine November 16, its route lying through Commercy, Vigneulles, Conflans, Briey, Moyeuvre-la-Grande, Thionville, and Remich, Luxemburg.⁶⁸ Entering Germany on December 1, the division passed from the high, rolling plateau, across which it had marched up to this time, and entered a more rugged terrain. Passing through Saarburg, Morbach, Kirschberg, and Simmern, it reached the Rhine near Bacharach and St. Goar. On December 16 it reached its billeting area, with headquarters at Andernach.⁶⁹

By November 1, after the division had entered the rest area south of Bar-le-Duc, the sanitary train congregated at Tronville and Velaine. Here all organizations were brought up to full strength and were reorganized, equipment was repaired, and shortages were filled. Special attention was given to personal cleanliness, and a vigorous training schedule was followed

Repair and replacement of equipment and training of personnel were continued throughout the march.⁷⁰ Moving from Tronville on November 16, headquarters of the sanitary train reached Elvange, Luxemburg, on November 23 and there remained until the division entered Germany on December 1. As the several organizations of the train were moving constantly and usually independently, it was not until train headquarters reached a permanent place that difficulties pertaining to the rendition of reports were overcome and all such papers were brought up to date. During much of the march dismounted members of the train were carried on trucks or in ambulances.⁷¹

During the march the division surgeon held frequent conferences with regimental surgeons, who reported that the physical condition of the troops was excellent, yet by the time the division reached Remich a considerable number—chiefly replacements—were suffering from chronic arthritis, flat-foot, and other foot conditions which required their evacuation. Nevertheless, transfers to hospital were not excessive. Close inquiry was made concerning the health of inhabitants in the territory traversed, and appropriate measures were taken to avoid infection.⁶⁹

On the march the sanitary train functioned as follows:

Ambulance Company No. 5, from November 1 to 17, evacuated patients from Field Hospital No. 27, at Velaines, to Base Hospital No. 83, at Revigny. On the 17th the company proceeded to Mondorf where, on the 23d, it evacuated patients to the corps hospital at Esch. On the same date the company was assigned to the 6th Brigade, which it served during the remainder of the march.⁷² During this time it evacuated patients from regimental infirmaries to hospitals at Mondorf, Saarburg, Treves, Buchenbeuren, Salzig, and Maria Laach. On December 16 it reached its final station at Mayen, Germany, when it evacuated patients to Field Hospital No. 5 at Maria Laach.⁷³

Ambulance Company No. 7, after being relieved in the Meuse-Argonne, was stationed at Tronville until November 14, when it was assigned to the 6th Brigade, which it served until November 23, when it was relieved by Ambulance Company No. 5.⁷² On December 1 the company arrived at Mondorf-les-Bains, where it evacuated patients from the corps hospital. December 6 it proceeded to Saarburg, where it evacuated Field Hospital No. 7. On the following day it proceeded to Buchenbeuren, where Field Hospital No. 7 established a hospital; the ambulance company evacuated this until the 14th. The following day the company left for Simmern, where it served Field Hospital No. 5. On the 16th it again moved forward and evacuated Field Hospital No. 27 at Salzig until the 28th, when it proceeded to its final station at Welling, Germany.⁷³

Ambulance Company No. 26, animal drawn, after its relief from the Meuse-Argonne, accompanied the 5th Brigade animal-drawn train to Tronville, where it remained until the 14th, when it proceeded to Mars-la-Tour, arriving there on the 19th. The following day it started with the train on its march into Germany, arriving at its final destination, Trimbs, on December 17.⁷²

Ambulance Company No. 27 was stationed at Tronville November 1 to 16, where it conducted ambulance service for the 6th Brigade. On the 17th it

accompanied the 5th Brigade on its march into Germany, arriving at its final destination, Andernach, Germany, on December 17. Throughout the march the company served the different regiments of the 5th Brigade.⁷²

Field Hospital No. 5 was billeted at Velaines November 1 to 17, when it started on its march into Germany.⁷⁴ It did not function until it reached Simmern, Germany, on December 9, where it established a divisional sick hospital. December 15 all patients were evacuated, and the organization proceeded to its final destination at Maria Laach, where it established a hospital in a monastery and a hotel, caring for division sick. Up to the last of December it admitted 397 patients, with 2 deaths.⁷⁵

Field Hospital No. 7 was billeted at Velaines November 1 to 17, when it started on its march into Germany. On December 2 it reached Saarburg, Germany, where a detachment of 3 officers and 13 enlisted men opened and operated a hospital until the 8th. The remainder of the company operated a hospital at Buchenbeuren, Germany, from the 6th to 13th. The organization then proceeded to Andernach, where it opened and operated a hospital.⁷⁵

Field Hospital No. 26, animal drawn, after the Meuse-Argonne operation, was located at Velaines, leaving there on the 14th for Mars-la-Tour, where it arrived on the 19th. The following day the hospital resumed its march, arriving at its final destination at Trimbs, December 17. The organization did not operate any hospitals during the march.⁷⁵

Field Hospital No. 27 was established at Velaines November 1 to 17, caring for divisional sick. During this time it admitted 546 patients. Evacuating all its patients to Base Hospital No. 83, at Revigny, it then started on the march into Germany. It resumed operations at St. Elizabeth's Convent, about 1 km. (0.6 mile) from Mondorf, Luxemburg, where it received patients from November 24 to 25. On the latter date the hospital returned to Elvange, and on December 1 it again opened at the St. Elizabeth's Convent. This operated until December 6, when its patients were turned over to a hospital of the 4th Division. During this time it cared for 202 patients, with 1 death. On December 12, the hospital arrived at Bad Salzig, where it operated until January 18, 1919. During this period it admitted 325 patients with 7 deaths from pneumonia.⁷⁵

THE 4TH DIVISION

Orders originally issued concerning the evacuation service of the 4th Division during its march to the Rhine are quoted below:⁷⁶

HEADQUARTERS 4TH DIVISION,
AMERICAN EXPEDITIONARY FORCES,
OFFICE OF THE DIVISION SURGEON,
France, 14th November, 1918.

Circular letter No. 4.

To all medical officers, 4th Division.

I. In case the division is called upon to carry out a march of more than one day's duration, the following sanitary tactics will ordinarily be applied:

1. Disposition of sanitary units on the march:
 - a. Combat equipment with combat train of battalion and regiments.
 - b. Camp infirmaries with combat train of regiments.

c. One field hospital and one ambulance company in rear of advance guard or center column.

d. Remainder of sanitary train in rear of main body.

e. Two animal-drawn ambulances with each regiment of Infantry, one with each regiment of Engineers and Field Artillery.

f. One motor ambulance detachment patrolling the roads in the rear of the marching troops.

2. Care and evacuation of the sick and injured on the march:

a. Soldiers who are unable to march with their units on account of sickness or injury will be given a pass signed by a commissioned officer and, accompanied by a noncommissioned officer, will await the arrival of or proceed to the medical officer marching in the rear of the battalion, who will make proper disposition of the case and who will send back the pass to the unit commander by the noncommissioned officer, having noted thereon the disposition made of the case.

b. According to the condition of the soldier, he will march with the sanitary detachment or be transported upon the animal-drawn ambulance marching with the column.

c. In case it is assured that the soldier will be unable to march with his unit on the following day, or that he is in need of immediate hospital care, he will be turned over to the motor ambulances patrolling the roads in the rear of the column. In case the motor ambulance can not make contact with the particular body of troops, the soldier, accompanied by the necessary personnel of the sanitary detachment, will await the arrival of the motor ambulance at the side of the road.

d. Motor ambulances will evacuate patients to the division field hospital operating as the evacuation point for that particular day, as explained below.

e. All soldiers disposed of as indicated above will be tagged with a diagnosis tag whether accompanying the column either by walking or in ambulance, or evacuated.

3. Care and evacuation of sick and injured at conclusion of day's march:

a. The Field Hospital accompanying the advance guard will open immediately upon arrival at halting place for the night and will be the evacuation point for the following twenty-four hours.

b. Sick call will be held by battalions as soon as practicable after the troops are settled in billets, camp or bivouac.

c. Motor ambulances of the ambulance company accompanying the advance guard will call at each battalion and regimental aid station or infirmary at the hour designated for sick call or, if none is designated, will call between the hours of 16 and 17 o'clock and will evacuate patients in need of hospital care to the field hospital designated above.

d. Patients not in need of evacuation, but assumed to be unable to march with the units on the following day, will be tagged "Quarters," and ordered to report at the beginning of the next day's march to the sanitary detachment for transportation upon the animal-drawn ambulance.

e. Patients in need of evacuation at the hour of the beginning of the day's march may be left at the side of the aid station, where the ambulance detailed to the duty of patrolling the roads for that day will report at least one-half hour before the hour of marching and from which point these ambulances take up their day's work.

f. In case of emergency need of a motor ambulance during a halt, it may be obtained at the field hospital with the advance guard, where one ambulance will be retained for emergency calls.

g. In case of a halt of more than one night, surgeons will ordinarily open their camp infirmaries at which "quarters" cases can be given better observation and care than within their units.

4. Disposition of units of sanitary train:

a. Evacuation to the field hospital designated above will begin as soon as possible to the evacuation hospital designated to the commanding officer of the sanitary train as his evacuation point, and will be completed not later than the evening of the following day, whereupon this field hospital will close and prepare to rejoin the volume of the sanitary train for the following day's march.

b. At the conclusion of each day's march a second field hospital and a second ambulance company will be designated by the commanding officer of the sanitary train to join the troops that are to form the advance guard upon the following day. The place and hour at which these sanitary units will report will be designated in the march order.

c. In this way it appears that two field hospitals are always open. In case evacuation to the rear from the field hospital is delayed, or the number of patients is relatively large, three field hospitals in echelon may be open at the same time.

d. In case one brigade is detached from the division for duty at a distance, one field hospital and one ambulance company will ordinarily be detailed for duty with such brigade.

e. The disposition of the motor ambulance detachments is therefore as follows:

(1) One detachment with advance guard, which collects from battalions after the halt and evacuates the field hospitals after collection is completed.

(2) One detachment with the field hospital opened at the preceding halt and evacuating its cases to the rear.

(3) One detachment patrolling the roads in rear of the troops and evacuating them to the field hospital opened at the preceding halt.

(4) These detachments perform the duties indicated in paragraphs 1, 2, and 3 above in daily rotation, in the sequence in which they appear above; i. e., the detachment with the advance guard becomes the detachment evacuating the field hospital on the following day, and on the detachment patrolling the roads behind the troops.

f. In case of a halt of more than one night the disposition to field hospitals and ambulance companies remains as on the night of the halt.

g. In case a motor ambulance is required at any point in real emergency and an ambulance patrolling the roads is not to be had in time, an ambulance may be obtained from the detachment with the advance guard or center column.

h. The commanding officer of the sanitary train will issue the necessary orders to put these general provisions and those of the daily march order into effect.

5. When patients are reported for evacuation, in case the routine ambulance service will not meet the particular need, the following information is desired in order that an ambulance may be sent promptly and certainly:

From: (Individual sending the message.)

Representing: (Surgeon, 39th Infantry.)

At: (Place from which message is sent—geographic location.)

No. of patients (3); sitting (2); recumbent (1).

Contagious: (Yes or no.) Type: (Mumps.)

Organization: (Hdqrs. 39th Infantry.) At: (Vignot.)

Ready at: (Once or 16:00 o'clock, 15 Nov.)

These orders were soon modified by memoranda issued by the division surgeon.⁷⁷

17TH NOVEMBER, 1918.

Memorandum to the commanding officer, 4th Sanitary Train.

I. In order to carry out the general provisions for the evacuation of sick and the movement of the sanitary train on the march with the division, the following principles will apply in addition to those already indicated in previous orders or instructions:

1. The area for each night's bivouac or billeting will be indicated in the day's march order for each brigade of Infantry and the brigade of Field Artillery. The Field Artillery brigade will ordinarily be one day's march in rear of the Infantry. The area between that of the Field Artillery and that of the two Infantry brigades will be available for the sanitary train for bivouac or billets. In default of specific orders, the commanding officer, sanitary train, will select the bivouac or billeting area for his train within the area designated above for each halt. This area to be along the division axial roads or on crossroads leading thereto from the corps axial roads. This area will include ordinarily the place at which the field hospital is opened each afternoon as the evacuation point for the follow-

ing twenty-four hours. The immediate vicinity of the corps axial roads will not be utilized for bivouac, billets, or establishment of field hospitals without special request to and authority from this office.

18TH NOVEMBER, 1918.

Memorandum to commanding officer, 4th Sanitary Train.

I. Previous instructions concerning movement of route ambulances by corps axial roads are rescinded.

II. Corps axial roads will not be used by the 4th Sanitary Train.

III. Motor ambulances evacuating from organizations will move on the division axial roads and on the roads included within them.

Before the march each regimental surgeon was provided with a Ford car and one motor ambulance was assigned to each regiment. During each day's march motor ambulances were stationed at important crossroads and in towns passed by each column, remaining in place until the troops had passed, to collect any disabled who might have been overlooked. Ambulances patrolled the roads and visited all towns where troops had rested or had passed the night. All but 7 patients were collected by the primary regimental ambulance service, and of these all but 1 was picked up by this supplementary patrol.⁷⁸

When, after resting in the latter part of November, the troops again advanced on December 2, evacuation orders were changed. The march could have been continued under these substituted orders for one or two weeks longer than proved necessary, but some of the divisional units fell far to the rear. The order under which field hospitals now operated was as follows:⁷⁹

1ST DECEMBER, 1918.

Memorandum to the commanding officer, 4th Sanitary Train.

I. The evacuation and care of the sick on resumption of the march will be in general as follows:

1. One field hospital will open each second day in advance portion of division area as evacuation point for following two days and will remain open for seven days, or until necessary to bring it forward to rejoin command.

II. Evacuation further to the rear will be limited to definite necessities in order to avoid unnecessary loss of soldiers to duty and unnecessary crowding of hospitals of the rear. The following cases will ordinarily be evacuated at once:

1. Contagious cases, excepting the milder influenza and respiratory infections.
2. Major surgical cases.
3. Disability cases unfit for combat duty.

III. When a field hospital receives orders to close and rejoin command, if it has remaining cases who will probably return to duty within seven days, these patients will be transferred to the field hospital next toward the front.

IV. In order to facilitate evacuation from units when the field hospital operating as evacuation point is at a distance, a collection station may be opened at headquarters, 4th Sanitary Train, at the halt when new field hospitals are opened for the purpose of transferring patients to other ambulances with economy of transport.

Orders such as the following were issued daily under the foregoing general plan:⁸⁰

5TH DECEMBER, 1918.

Message to commanding officer, 4th Sanitary Train.

I. The division continues its march at 8 o'clock, 5th December.

II. The 4th Sanitary Train, less Field Hospitals Nos. 19, 21, and 23, will proceed to Riöl, 6th December, for billets night, 6/7 December. Transport will proceed via Nieder—Zerf—Pelligen—Trier [Treves]. Marching troops will take the most direct practicable route.

III. Field Hospital No. 28 will open at Riol (Ruwer-Paulin being out of division area) at 9 o'clock 6th December, as evacuation point.

IV. Field Hospital No. 19 will rejoin command at Riol.

V. Acknowledge receipt of this message and of Field Order No. 98 these Hq. to this office by radio.

It was estimated that 100 cases a day would be admitted to the field hospital opened for the service of the division, and that at the end of five days 125 of these patients would have returned to duty, leaving 75 to be carried to the next field hospital then operating farther forward. The number of patients in the latter hospital would have been reduced meanwhile to 125, thus enabling it to admit the patients from the rear hospital. Admissions were actually at the rate of 86 a day, but because of difficulty in finding hospital accommodations in the small towns there was some irregularity in the program. Hospitals enjoying the best facilities e. g., those located at Mondorf and Cues, remained open somewhat longer than had been planned originally. As many cases as possible were retained with the division. Admissions were due chiefly to foot troubles caused by hurried equipment of the command just before the march began, and the consequent lack of opportunity for breaking in new shoes, to lack of endurance and morale among several thousand replacements received just before the march began, and to an epidemic of mumps which appeared in the division.⁸¹

The following statistics are quoted:⁸²

Approximate length of march.....	km..	330
Total number of days included in march.....		26
Actual number of marching days.....		15
Average day's march.....	km..	22
Mean strength of division on march.....		24,996
Total number of admissions to field hospitals.....		2,167
Rate per 1,000 of admissions.....		86.6
Average daily number of admissions.....		86
Average daily rate per 1,000 of admissions.....		3.4
Total number evacuated farther to the rear.....		1,097
Total number returned to duty from field hospitals.....		732
Average number remaining in field hospitals at 12 noon.....		222

THE SEVENTH CORPS

Organized in August, 1918, with headquarters at Remiremont, Vosges, the Seventh Corps served in the zone of the French Seventh Army until November 7, under the administrative control of our American First Army. On November 8 the corps was relieved from duty in the Vosges sector, assigned to the First Army, and located at Benoite Vaux until after the armistice. On November 15 it moved to Lahécourt and November 22 became part of the Third Army. It moved successively to Dun-sur-Meuse on November 20, Virton, Belgium, November 23, Grevenmacher, Luxemburg, December 4, and on December 12 to Wittlich, Germany, remaining at the last-named place until it was repatriated.

During the march into Germany the Seventh Corps, consisting of the 89th and 90th Divisions, was the rear element of the Third Army. The 33d

Division passed to the corps on December 12 and on the 17th was transferred to the Second Army. After arrival in Germany the Seventh Corps was located in the western part of the American sector, with headquarters at Wittlich, 89th Division headquarters being at Bitburg and that of the 90th Division at Berncastel.⁸³

MEDICAL DEPARTMENT ACTIVITIES

With the exception of Field Hospital No. 156, which was retained to assist Camp Hospital No. 70, at St. Florent, the hospital section of the 114th Sanitary Train moved to Souilly, where on November 11 Field Hospital No. 155 was detached and the other two, Field Hospitals No. 153 and No. 154, were assigned to the sanitary train of the Seventh Corps. These hospitals were billeted at first at Rambluzin, remaining there until November 16 when they went with the Seventh Corps to Auzecourt. November 21 they moved to Dun-sur-Meuse and were joined there by Evacuation Ambulance Companies Nos. 5, 6, and 8. On November 23 the train moved to Virton, Belgium, and thence, on December 5, to Berg, Luxemburg. Field Hospital No. 155, which had rejoined shortly before the last movement, Field Hospital No. 154, and Evacuation Ambulance Company No. 5 were ordered to Echternach on December 12, to establish a corps collecting hospital and to relieve hospitals of the 89th and 90th Divisions.⁸⁴ One of these units was also established for a few days at Hetzerath, Germany, to care for the sick from corps troops and for stragglers from divisions in advance.⁸⁵

On December 14, headquarters of the field hospital section, Field Hospital No. 153, and Evacuation Ambulance Companies No. 6 and No. 8 accompanied Seventh Corps headquarters to Wittlich, where, on the 16th, Field Hospital No. 153 opened the corps collecting station, which also functioned as a camp hospital as long as the corps remained in Germany. The units which had been located at Echternach were relieved on December 27 and rejoined at Salmrohr, Germany, but on January 8 the personnel of Field Hospitals No. 154 and No. 155 were assigned to duty with Evacuation Hospital No. 3, at Trier. On January 11 headquarters of the sanitary train and of its field hospital section were located at Dreis, where Field Hospitals No. 154 and No. 155 rejoined on February 8. Headquarters of the 114th Sanitary Train and of its ambulance section, with Ambulance Companies Nos. 153, 154, and 155 joined on January 18, having been retained for duty until this time in the 39th divisional area. The designation of the train was changed on January 20 to that of Seventh Corps Sanitary Train, which then consisted of train headquarters, headquarters of its ambulance company, and hospital sections Ambulance Companies Nos. 153, 154, and 155, and Field Hospitals Nos. 154, 155, and 156. Evacuation Ambulance Companies Nos. 5, 6, and 8, which had served the corps throughout the march, were relieved on January 24 and returned to the First Army.⁸⁴ These companies had assisted in the evacuation from divisions, had cleared corps hospitals, and furnished ambulances to the various organizations composing the corps troops.

From the field hospitals as finally located evacuations were effected by division and corps ambulance companies to two evacuation hospitals in Trier and to one in Prum.

THE 33d DIVISION

On December 7 the 33d Division began its movement to the Third Army area, reaching Conflans, 50 km. (31 miles) distant, in two days. On the 10th, it reached Aumetz and on the 12th, Esch, in the southern part of the Duchy of Luxemburg. The total length of the march approximated 98 km. (60.8 miles), covered in six days. Rain was continuous. On December 16 the division started to move to the Grevenmacher area in eastern Luxemburg, and thence to Diekirch, where it arrived on the 20th.⁸⁰

Arrangements of the medical department were as follows: Ambulances in rear of the columns collected men who were unable to continue the march and took them to the field hospitals. Field Hospital No. 129 was located at Creue on December 7 and 8, receiving patients during the first day of the march; Field Hospital No. 131, at Conflans, received those incapacitated the following day. Similarly, Field Hospital No. 130 opened at Briey on December 10, receiving those incapacitated as the march progressed toward that point and beyond it. On December 9, Field Hospital No. 129 closed and moved to Ottingen, where it opened the next day as a collecting post for the sick. To this place that class of casualties continued to be removed as the march progressed. When division headquarters was established at Esch the sanitary train, with the exception of Field Hospital No. 130, which remained at Briey, was located at Ottingen, with its headquarters at Schiffingen. Until this time there had been but 135 evacuations from the division. During the first part of the march which ensued, Field Hospital No. 129, at Ottingen, received casualties; during its latter part Field Hospital No. 131, at Grevenmacher. When the division reached the Diekirch area that town was made headquarters of the sanitary train and of its sections. The field hospitals were located (December 26) at Ettlebruck, La Rochette, Grevenmacher, and Cruchten. In the latter part of the march 115 men became incapacitated.⁸⁷

THE 89TH DIVISION

After the armistice the 89th Division was assigned to the army of occupation and began its march to Germany on November 24. The first troops of the Division crossed into Germany on December 5, at Echternach. Headquarters was established at Kylburg, and remained there until the division returned to the United States.⁸⁸

Unfortunately there is no report available of the activities of the Medical Department of the 89th Division during its march to the Rhine.

THE 90TH DIVISION

After the armistice the division was assigned to the army of occupation and later marched into Germany. The first troops crossed into Germany on December 6. Headquarters were established at Berncastel December 21, and remained there until the division returned to the United States.⁸⁸

As the 90th Division moved into Germany the field hospitals advanced by "leapfrogging," each operating at a given site for a few days only.⁸⁹

Field Hospital No. 359 functioned at Blanc Fontaine from November 13 to December 3; Field Hospital No. 358 at Ire-le-Sec, from November 23 to December 6; Field Hospital 360 at Hesperange, from December 3 to 8; Field Hospital No. 358 at Karthaus, from December 7 to 10; No. 359 at Remich, from December 7 to 11; No. 357 at Hetzerath, from December 10 to 21; No. 359 at Ernst, from December 12 to 20; and No. 360 at Udersdorf, from December 14 to 16. After arrival in Germany the field hospitals were used as camp hospitals and located at Daun, Gerolstein, Cues, and Manderscheid.⁸⁹

On November 23 the ambulance section, less Ambulance Company No. 359, which remained at Blanc Fontaine for duty with Field Hospital No. 359, moved with the other field hospitals to Ire-le-Sec. On December 1, Ambulance Company No. 360 moved to Gouraincourt, where it received a new allotment of animals and was attached to the 343d Field Artillery. The remainder of the ambulance section proceeded with the train, arriving at Manderscheid on December 16. Here it was joined by Ambulance Company No. 360 and ambulances were distributed throughout the division over an area some 135 km. (83.8 miles) long by 53 km. (32.9 miles) wide.⁸⁹

THE 5TH DIVISION

As rapidly as possible, after the armistice, the troops of the 5th Division were provided with bathing facilities, were disinfested, and furnished new clothing, meanwhile undergoing training. Twenty-five motor ambulances were transferred to the 1st Division at Nantillois on November 15 and the animal-drawn transport of Ambulance Company No. 30, 5th Sanitary Train, was turned over to the 5th Division salvage dump at Doulecon on November 30.⁹⁰

By Field Orders, No. 80, Third Army, dated November 21, the 5th Division was detached from further duty with the Seventh Corps and assigned to duty with the line of communications. To function directly under the Third Army, the division commander being designated as the commanding general of the Third Army, line of communications. On November 25, division headquarters advanced to Longuyon, where Field Hospital No. 17 had opened on November 23 to receive patients from the 5th Division and returned allied prisoners and also to conduct a clinic for French civilians living in the vicinity. Field Hospital No. 30 opened at Longwy on the 29th, assisting a hospital of the Third Corps. At Virton and at Montmedy Medical Department detachments operated small hospitals, the former for allied soldiers and French civilians, the latter for sick and wounded Germans. A third detachment took over patients at Stenay, thus releasing a hospital of the 90th Division, while a similar detachment released the hospitals at Ire-le-Sec. Evacuation Ambulance Companies No. 5 and No. 8 joined on November 28, but were relieved two days later by United States Army Ambulance Service Sections No. 560 and No. 571.

When division headquarters moved to Hollerich on December 4 it was accompanied by Field Hospital No. 29. On the 12th headquarters advanced to Merl and on the 17th to Esch, but Field Hospital No. 29 remained at Hollerich until the 18th, when it rejoined headquarters at Esch.⁹¹

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CHAPTER XXXIX

AMERICAN OPERATIONS IN ITALY (BASE SECTION NO. 8)

General Pershing, in explaining the necessity for sending troops to Italy, stated:¹

The Italian Government early made request for American troops, but the critical situation on the Western Front made it necessary to concentrate our efforts there. When the Secretary of War was in Italy during April, 1918, he was urged to send American troops to Italy to show America's interest in the Italian situation and to strengthen Italian morale. Similarly a request was made by the Italian Prime Minister at the Abbeville conference. It was finally decided to send one regiment to Italy, with the necessary hospital and auxiliary services, and the 332d Infantry was selected, reaching the Italian front in July, 1918.

The regiment was attached to the Italian Third Army. Its several battalions visited different sections of the front in order to create the impression that a large body of American troops had arrived. From October 27 to 29, the regiment assisted in establishing bridgeheads across the Piave River and from October 30 to November 4 took part in the pursuit of the Austrians. On November 4 it reached the Tagliamenta River, near Valvasone, crossed in the face of machine-gun fire from front and flank, and pushed forward 16 km. (10 miles) to Villaroba, where it was in position when the Austrian armistice went into effect.²

MEDICAL DEPARTMENT ACTIVITIES

Our medical activities in Italy, though of minor importance, were of a twofold nature: Those in connection with the small body of American troops which has just been discussed and those directly concerning the Italian Army through our ambulance sections which served with it. For our own troops, beside the regulation allowance of regimental medical personnel for one Infantry regiment, the Medical Department consisted of one field hospital and one base hospital. The base hospital was really detailed for service with the Italian Army. Thirty sections of the United States Army Ambulance Service were sent to Italy originally; later, 15 of these were withdrawn. While all these sections were officially for service with the Italian Army, one section was actually used to evacuate patients from our regiment.³

Officers and enlisted men of the Medical Department were attached to each battalion of our regiment when it went into action, and aid stations were established under direct supervision of the regimental surgeon. The motor transport furnished by the United States Army Ambulance Service section from the Italian Army carried patients to Field Hospital No. 331, which had been attached to the regiment. This hospital, specially staffed and equipped, operated for a time in two sections stationed 95 miles apart at Lumbraga, and Cos-toza, respectively. The section of the hospital at Lumbraga occupied a modern

concrete building with two stories and an attic, provided with electric lights, running water, good toilet, and other facilities. It operated 5 large wards, and 2 smaller ones of 6 beds each for shocked and gassed cases.³ When the regiment which this hospital served went into action, a subsection of the section at Lumbraga followed it to operate as a field hospital, while the subsection left behind operated as an evacuation hospital. The latter sent its patients to Base Hospital No. 102 which had been detailed for service with the Italian Army, and permanently stationed at Vicenza, September 6, 1918. During the operation which the Italian Army conducted in October and November, 1918, this base hospital sent to the front surgical teams which served at dressing stations and assisted in evacuation of the wounded. Until after the armistice this hospital did not admit medical cases from the Italian Army but in September arrangements were made for it to accept both medical and surgical patients from the American forces in Italy. Later it also organized a hospital of 400 beds for medical cases only, reserving the original plant for surgical cases.⁴

The 30 sections of the Ambulance Service sent from the United States on June 13, 1918, for duty with the Italian Army, comprised 76 officers and 1,641 men.⁵ Each section was provided with transportation as follows:⁶

- 1 1¼-ton Pierce Arrow truck.
- 1 Dodge truck.
- 1 Dodge touring car.
- 12 Standard G. M. C. motor ambulances.
- 1 180-gallon tank mounted on G. M. C. chassis.
- 1 repair car, G. M. C. chassis.
- 1 motor cycle with side car.

Machine shop truck units accompanied two of the companies.

While the equipment of the sections was being assembled in Italy, plans for operating the service were in course of completion. The port and quartermaster base was at Genoa; headquarters and one motor repair park at Mantua; the advance base for supplies, a bakery, and a post office at Vicenza; and one motor repair park at Castelfranco. The sections were distributed among the several Italian armies and began operations, the locations selected for them being in a semicircle to the east, north, and west of Vicenza, and extending from Lago da Garda to Venice. Four of the sections worked in the mountains and the remainder on the plains.⁷ The system of supply here was based on formation of the sections into groups of three or four each, as deemed best according to location. One section in each group collected the mail and orders for supplies from the other sections of its group, and twice each week, on specified days, sent them to Vicenza, by a truck which brought back mail, supplies, and fresh bread for all the sections of the group concerned. Trips to the advance base were thus reduced to the minimum.⁷

In August, 1918, our Government requested the Italian Government that 15 of the United States Army Ambulance Service sections with it be sent for service in France. Six were forwarded at once by rail on August 24, at the same time the remainder of the 15 going overland under their own power, a distance of some 960 km. (600 miles). To compensate for this

loss to the Italian Army, 3 ("provisional") sections were organized and equipped, by reducing the number of men in each section (old and new) from 45 to 32 and by supplying the new units from replacement material. After dispatching the 15 sections to France and the 3 provisional sections to the Italian front, headquarters moved to Castelfranco where it remained until the United States Army Ambulance Service was withdrawn from Italy.⁸

The Italian sanitary service, like our own, provided a dressing station operated by an ambulance company. It was found in practice, however, that under some circumstances much transport service was needed where no dressing stations were required, and that under others, dressing stations were needed in excess of the regulation number of ambulances attached to them. Consequently the ambulance service transport and the dressing stations actually became more and more independent of each other and so no difficulty was experienced in finding assignments for all the United States Army Ambulance Service sections, which were transportation units only. Some furnished wounded transport to isolated outposts on the extreme front, where they received their patients from regimental and even from battalion aid stations; others reported to the "*smistimento*" (general sorting station), whither patients were sent from the aid stations to be assigned and transported to rear hospitals specializing in the different branches of medicine or surgery. The sections along the lower Piave had extremely heavy work evacuating malarial patients, as that disease proved a serious cause of disability to such parts of the Italian Army as were located at certain places on the river.⁹

No effort was spared by the Italian authorities to make the general conditions under which the ambulance service operated as pleasant as possible. As a rule the sections were assigned excellent quarters and all were granted the privileges of the Italian commissary.¹⁰

In the final great battle on the Italian front, known as Vittorio-Veneto, (October 24 to November 4, 1918) the United States Army Ambulance Service sections accompanied the troops to which they were attached, some going north into the Trentino and others following the contingent of the Italian Army which pursued the retreating Austrians around the head of the Adriatic, taking stations in the neighborhood of Goritzia and Trieste.¹¹

As the demand for transportation for wounded was urgent at this time, all vehicles available, including heavy draft trucks, and all personnel, including clerks in the offices, were sent to the front to augment the strength of the ambulance sections.¹¹

When the Austrians had been driven out of Italy and a new line had been established, the distance from the front to the hospitals south of the Piave River, to which patients were now evacuated, was from 120 to 240 km. (75 to 150 miles.) The mild winter of 1918-19, almost without snow and with no severe cold in Italy, presented no obstacles to the transport of sick and wounded which continued uninterruptedly until late in March, 1919, when the ambulance sections were withdrawn and assembled at Genoa, to sail for America.¹¹

The supply depot of the American Expeditionary Forces located at Alessandrie, Italy, and organized October 31, 1918, was the base for medical as well as other supplies in Italy.¹²

It is also desirable to mention here that the American Red Cross operated three small hospitals in Italy—at Rome, Florence, and Milan—and stood ready to equip others should need arise. It sent nurses wherever they were most required and furnished supplies to a great number of medical department organizations of the Italian Army. In September, 1918, it offered to receive American casualties, whether medical or surgical, into all its hospitals.¹³ It did not prove necessary to take advantage of this offer.

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CHAPTER XL

AMERICAN EXPEDITIONARY FORCES IN NORTH RUSSIA

On August 9, 1918, certain units were designated to constitute the original American contingent of the north Russian forces, sometimes called the "Murmansk expedition," or "Expedition to the Murman coast." They were: The 339th Infantry; 1st Battalion, 310th Engineers; 337th Field Hospital; and 337th Ambulance Company. These organizations, which belonged to the American Expeditionary Forces, had arrived in England prior to the above date, and at the time were being prepared and equipped, at Aldershot, for service in Russia. Their instructions provided that no animals should be taken with them to Russia, but all vehicles, saddlery and harness (except for the field hospital company), and American field kitchens. British personal equipment was ordered issued, and clothing for winter service, with Russian rifles and Lewis machine guns, Russian pattern. On August 10, modified instructions directed that American personal equipment be taken instead of British. Preparations were completed and the command embarked on August 27, 1918, and arrived at Archangel on September 4.¹

The American forces, numbering 143 officers and 4,334 men, after their arrival at Archangel, were promptly disembarked and shortly thereafter distributed. The 1st Battalion, 339th Infantry, joined the allied forces on the Dwina and Vaga Rivers. The 2d Battalion, 339th Infantry, was stationed at the base (Archangel, Bakharitzza, and vicinity), with the exception of a detachment on guard duty at Isakagorka and a detachment at Onega. The 3d Battalion was distributed through the allied forces, two companies going to the left wing at Seletskoe. Shortly thereafter regimental headquarters was located in Archangel. Ambulance Company No. 337 was divided into 3 sections, 1 officer and 35 men being detailed to the allied forces along the railroad, 1 officer and 35 men with the allied forces on the Dwina, the remaining officers and men to the base. A detachment of five of the ambulance company personnel and one of the 339th Infantry, Medical Department, accompanied our other troops to Onega by way of Dwina Bay, White Sea, and Onega Bay, where they established a hospital and later accompanied our troops to Chekuevo. Field Hospital No. 337 remained at Bakharitzza to care for the 378 influenza patients admitted in September, of which 60 proved fatal. Soon after, however, a section of the field hospital established a 100-bed hospital at Bereznik.¹

From September, 1918, to May, 1919, occurred a series of engagements in which 82 Americans were killed and 7 died of wounds.²

Withdrawal of our forces commenced in May, 1919, and on August 25 only a small graves registration detachment remained.²

MEDICAL DEPARTMENT ACTIVITIES

The office of the chief surgeon of the American troops in North Russia was established in the convalescent hospital (described below) in Archangel, and an assistant represented him in the Dwina area because of its distance (135 miles) from the base. All arrangements for medical supplies and personnel were made through the deputy director (British) of the medical services.³ In every area the senior medical officer was British. Both armies had to comply with their respective regulations and some months elapsed before mutually satisfactory methods were evolved. The following arrangements were made January 5, 1919, over the signatures of the deputy director of Medical Services (British Army), French chief medical officer, and the chief surgeon, United States troops:³

1. The deputy director of medical services carried out the general direction of the entire medical services of the force and is responsible to the general officer commanding in chief.

2. All questions affecting the medical administration of the Force and relating to policy, to the drafting of orders, to the distribution, disposal, and relief of personnel and to sanitation will be decided after consultation between the senior allied or American administrative medical officer concerned and the D. D. M. S.

3. The chief surgeon, U. S. troops, and allied senior medical officers have control of their own personnel and will distribute them in conformity with the military and medical situation after consultation with the D. D. M. S.

4. A similar arrangement will hold in regard to fighting forces. With each force there is a senior administrative medical officer who is responsible to the officer commanding that force and to the D. D. M. S. This officer will work in close cooperation with the senior allied or American medical officer.

No action affecting different nationalities should be taken until its advisability has been discussed with the representative with the force of the senior allied medical officer or of the chief surgeon, U. S. troops.

All assignments of duties or movements, allied or American personnel, will be carried out under the orders of their S. M. O.'s or the chief surgeon or the representative of these officers on the spot.

5. All communications from British medical officers for the chief medical officers or allied and American troops at G. H. Q. should be made through channels to the D. D. M. S.

Similarly all communications from allied or American medical officers will be passed through their own chief medical officers.

6. All differences of opinion which can not be otherwise adjusted should be referred to S. M. O.'s, the chief surgeon, or the D. D. M. S.

7. In case of emergency the senior medical officer of the force or station may issue any order to allied or American medical personnel, but he must at the earliest opportunity report it to the representative at G. H. Q., of the medical service concerned and to the D. D. M. S. through the usual channels.

The most difficult problem for the Medical Department at first was proper distribution of its personnel, so as to cover the ground. The front then held was approximately 450 miles in length, encircling Archangel on three sides. from Pinega on the east and Ust Padenga on the south, to Onega on the west. The distance from Archangel to Pinega was 112 miles; from Archangel to Ust Padenga, 234 miles; and from Archangel to Onega, 145 miles. The total area occupied was approximately 15,000 square miles.³ As the American

troops were not concentrated in one sector, but were distributed throughout the entire area occupied, it was impossible to maintain their medical organizations intact. Officers and enlisted men of the Medical Department, including those on duty with Field Hospital No. 337 and Ambulance Company No. 337, therefore, were "pooled" and detachments varying in strength from 2 to 35 were sent to the various positions, and then moved as the military situation necessitated. The detachments with line troops accompanied their respective battalions and were subdivided when necessary. Owing to the rapidly changing military situation, the medical detachments were often moved and their strength was changed.³

A weekly report showing the distribution of the medical personnel was made to headquarters, A. E. F., North Russia, and a duplicate was sent to the deputy director of medical services, allied forces, Archangel. In some instances, the personnel was assigned to duty in hospitals, dressing stations, and aid posts and under direction of American medical officers served the needs of both American and allied troops, while on other occasions it was assigned to hospitals and dressing stations under British, French, or Russian control. Because of the distribution of the allied troops as a whole, all hospitals, dressing stations, and aid posts outside of Archangel cared for sick and wounded of all the allied forces in their respective sectors, regardless of the army to which they belonged or the nationality of patients admitted. Though this arrangement was essential under the circumstances, and operated to the best interests of all concerned, it rendered administration and the keeping of records and returns difficult.³

At first there were no French, Russian, or Italian military hospitals in the advance area, but later, when Russian troops permanently took over certain forward areas, the hospitals in these areas were transferred to them. In some instances buildings used as hospitals by British were turned over to the Americans upon their arrival in an area.³

During the voyage to Archangel an epidemic of influenza developed, the first case being recognized on August 29. Despite all possible precautions, the disease spread rapidly, until, on arrival at Archangel, there were 100 cases on the S. S. *Somali*, 75 on the S. S. *Negoga*. No cases occurred on the S. S. *Tideus*. These were the three vessels which transported the expedition. No deaths occurred at sea. Upon arrival it was found that the British hospitals were able to care for only a small percentage of the patients. Twenty-five of the most seriously ill were transferred to the British 53d Stationary Hospital, and American emergency hospitals were immediately opened. At this time the Archangel district was inadequately provided with hospitals and facilities to care for the sick. Not until November were enough beds available here to meet needs imposed by the epidemic. Field Hospital No. 337 took over two Russian barracks at Bakharitza, a small hospital (40 beds) was opened at Smolny Barracks (Archangel), and the American Red Cross provided a building at the north end of Troitsky Prospekt, which (accommodating 30 patients) was used for hospital purposes. The buildings at Bakharitza and Smolny Barracks were in a filthy condition, and even after thorough cleaning

it was necessary to scrub and spray them daily, as they were infested with vermin.³ It had been anticipated that these accommodations would be temporary only, but the last mentioned continued to be utilized for a number of months. A convalescent hospital accommodating 100 patients, later enlarged to care for 200, was opened October 8, 1918. This was equipped with a Thresh disinfector. It was supplemented by a depot where all men returning to duty were equipped.⁴ On November 16, through the cooperation of the American ambassador, the British deputy director of medical services and the Russian authorities, the American Red Cross obtained a large building adjoining the convalescent hospital which it offered to our Medical Department. The offer was gladly accepted and the American Red Cross equipped the institution, undertook to maintain it, and assigned two female nurses to it. The proffer, at the same time, of the services of one of the American Red Cross medical officers was made. This hospital, which had a capacity of 100 beds, later increased, was the base hospital of the expedition and remained in operation until our troops were withdrawn.⁴ It received 911 patients and performed 103 operations. As it had no X-ray plant, necessary radiographic examinations were made by the British 53d Stationary Hospital, which was provided with equipment for that purpose.⁵

In addition to the hospitals which have been mentioned, 5 infirmaries were established in or near Archangel. A delousing station was placed at Smolny Barracks, and prophylactic stations operated there and at the convalescent hospital. Field Hospital No. 337 remained for a few weeks at Bakharitza to care for influenza patients,⁴ but on September 28 was divided into sections A and B, the former then moving to Beresniki, where it established a hospital of 100 beds. Section B remained at Bakharitza until October 7, when it moved to Shenkursk, where it operated a hospital of the same size. In January, when Shenkursk was abandoned, section B moved to Osinovo, where from the British it took over and enlarged the small hospital they had been conducting there.⁶ Another part of this section took over a detention hospital from the British at Ust Vaga. In this, the Dwina Vaga sector, American medical detachments were stationed at Malo Beresniki, Kitskoe, Toulgas, Kurgomin, Ust Padenga, and Chamova, maintaining aid posts, dressing stations, or infirmaries, according to the need.³ At Ust Padenga and at Chamova, 10-bed hospitals, and at Toulgas a 4-bed hospital, were established. At Ust Padenga, the dressing station was moved three times during the military activities of January 19, 20, and 21, and was struck once, three patients being killed and two wounded, among them a medical officer who died later in the hospital at Shenkursk. During the several days' fighting, and until this line retreated to Shenkursk, many wounded were brought in to the field hospital and greatly overcrowded it. On January 24 it was necessary to evacuate this hospital, the Shenkursk hospital (Field Hospital 337, section B). At midnight 96 patients were transported to Shegovari, a distance of 20 versts (13.2 miles). This proved very difficult, as the enemy machine guns covered the main roads and in consequence the retreat had to be conducted over roundabout trails through the dense woods. Excellent help was

given by Lieutenant Tufanoff, Medical Corps, Russian Army, who later was killed in action at Kitskoe.⁴

Field Hospital 337, Section A, at Beresniki, was not able to furnish accommodations for the patients in question except for about 12 hours, as its capacity was only 100 beds and it was nearly full at the time of the retreat. Therefore, they had to be sent on to the base at Archangel. In the evacuation to the base but one patient died, a tuberculous case. This seems remarkable when it is considered how they were hurried on to Archangel, a distance of some 375 versts (247.5 miles). The temperature was about 30° below zero. The patients in the retreat were crowded by continually adding more wounded to their sleds. However, all were in sleeping bags and little complaint was heard on questioning them on their arrival at Archangel.⁴

In the Shegovari and Kitskoe region on the Vaga River a great deal of fighting took place during February, and the medical personnel worked night and day, often under heavy fire. Patients were evacuated to Ust Vaga, where a dressing hospital had been established, and then sent on to Beresniki to the field hospital there.⁴ At a later date, a third detachment (C) of Field Hospital No. 337 was formed and established a small hospital at Morjegorskaya.³

At Pinega, the most easterly point of the line, a hospital, with a capacity of 97 beds, was established December 20 by an American detachment of 1 officer and 8 enlisted men. It operated until April 8, 1919, when it was turned over to the Russian medical military department, as American troops were withdrawn from the sector.⁴

A small detachment made up from Ambulance Company No. 337 and from medical personnel with line troops accompanied troops beyond Seletskoe, where they assisted the British in establishing a small detention hospital which operated until May, 1919.⁴

For the Vologda or railway sector hospital facilities were provided in the railroad station at Obozerskaya which was taken over for this purpose. The hospital here was in position to receive patients from the Onega sector to the west and from the Seletskoe sector to the east and south, as well as from the railroad area. A very complete operating car and ambulances were maintained by the British based at this point. One or more American medical officers and the number of men required were kept on duty in this sector.³

The Onega expedition, which left Archangel September 14, included detachments of our Medical Department personnel which reinforced a British hospital at Onega and a dressing station at Chekuevo until American troops were withdrawn from that area.⁷

The supply of drugs, surgical dressings, and appliances proved sufficient. The type of bed in use practically everywhere—a wooden frame with canvas top—gave satisfaction, and the supply was ample. Additions to the ration by gifts from the American Red Cross, by requisition of medical comforts from British stores, and by barter with the local citizens for eggs, game, fish, potatoes, and milk made possible a fairly liberal and varied hospital dietary. In some localities Russian nurses (female) volunteered their services and

were of material assistance. Except at the most advanced stations, operative work could be done under good conditions, but the distance from the front in some sectors was so great that, with the difficulty in communication, wounded from these points did not receive operative care for several days. In some cases five days elapsed before they could be given any treatment other than re-dressing of their wounds. The Carrel-Dakin technique was employed whenever possible. Serious difficulties due to shortage of personnel occurred at times. They were really chargeable to poor transportation facilities rather than to lack in the Medical Department strength.³

In the early fall it was possible to evacuate sick and wounded from advanced points to the base on hospital barges. These provided a relatively rapid and comfortable method of transportation from the Vaga, Dwina, Pinega, and Seletskoe sectors. As navigation on the Dwina River became impossible after October 26, 1918, this method was no longer practicable. From that time until the river again opened in May the sick and wounded were transferred by horse-drawn sleds, carrying usually one or two patients each. Various types of covered or closed sleighs were constructed and tested, but all were unsatisfactory, as they either tipped over too easily or proved too heavy. The common Russian sled, built on the lines of a short, flat-bottom boat on runners, was ultimately found best. One of these would carry two recumbent patients. Lying on hay, in sleeping bags, covered by several blankets, with hot bricks to the feet, and with head and hands well protected by fur caps and heavy mittens, patients were transported comfortably in these conveyances. Convoys often were accompanied by our enlisted men to give patients the necessary care and attention en route. The journey was broken by frequent stops at the rest houses or hospitals which were established at intervals of from 5 to 20 miles along the route, and at some of these the convoys passed the night.³ The personnel staffing these places was drawn from the British Royal Army Medical Corps. As the distances of advanced points from the base ran up to 224 miles, the time necessary to perform the journey involved was considerable. Convoys of sick and wounded consisted of from 15 to 50 sleds, the larger convoys being preferable, as there was less likelihood of enemy attack on them. Small raiding parties and hostile patrols at times displayed considerable activity along the more exposed portions of the sled routes, notably between Beresniki and Emetskoe. The larger convoys were forced to proceed slowly, rarely averaging over 2 miles per hour.³ Even under the best conditions, and when traveling with a light load, a single sled could not make much more than 3 to 3½ miles an hour.

As during the winter daylight was limited to from two to four hours, much of the traveling was then done in darkness, which was intensified by the heavy forests through which the trail ran for many miles. In spite of these handicaps, over 500 sick and wounded were evacuated by sleds to Archangel during the winter of 1918-19. No serious accident occurred; only one death en route was recorded—a case of advanced tuberculosis—and no case of frost bite, of freezing, or of any other condition due to exposure, was reported.

On the other hand, many cases were observed where the long journey in the open air proved distinctly beneficial, and patients who had not been progressing satisfactorily in hospital sometimes showed marked and rapid improvement en route. An inspector who investigated several convoys on the Dwina-Vaga front reported that all the patients said they were well fed, well cared for, and amply protected against cold. Even with temperatures as low as 50° below zero patients came through very well.³

Direct communication with Archangel by railroad existed at all times from the Vologda sector, and until March, 1919, the majority of casualties occurring in the Onega sector were evacuated by sled to the railroad and then transferred to Archangel by rail.³ In the latter part of March, Bolshieozzerki was captured by the Bolsheviki, and the line of communication between the Vologda and Onega forces was cut for a short time. Until the recapture of Bolshieozzerki, casualties occurring in the Onega sector were evacuated by sled to Onega and there treated in a British hospital. From Pinega it was necessary, because of swamps and forests, to evacuate southwest 80 miles to the Dwina River.³

EVACUATION OF SICK AND WOUNDED TO ENGLAND

A total of 527 patients were returned to England for further observation and treatment or because of permanent disability. A medical officer accompanied each group of patients. On June 3, 1919, 325 were evacuated. The considerable number at this time was because cases had accumulated during the winter months when transportation was not available and because the commanding officer, 339th Infantry, had requested that only men able to perform full duty be returned to that organization. Many of the patients in this large group were convalescing and would have been fit for duty in a short time, only 8 of the 325 being classed as "lying down cases."³

EVACUATION OF TROOPS

The first detachment of troops left Economie June 3, 1919, on S. S. *Czar*, carrying 1,668 officers and men. On June 15, the S. S. *Menomina* and S. S. *Porto*, sailed, carrying, respectively, 853 and 1,360 troops, representing the balance of the 339th Infantry and the 310th Sanitary Train detachment; this left in Archangel only the 310th Engineers and the commanding general and staff, with a small headquarters detachment, all of whom sailed soon afterward.³

All troops were disinfested and reequipped upon arrival from the several fronts. Prior to embarkation all were inspected for venereal diseases, contagious diseases, scabies, and lice, and ships were rigidly inspected before troops were allowed to embark. Conditions on board ship were found to be good except that most of the ships' tanks had been refilled for the return voyage with untreated Dwina River water, which was known to be badly contaminated. This necessitated chlorinating all water on board before troops embarked.³

SUMMARY OF HOSPITAL FACILITIES⁸

The location of hospitals, dressing stations, and aid stations is given below.

Designation	Location	Opened	Closed	Bed capacity
Field Hospital No. 337.....	Bakharitza.....	Sept. 6, 1918	Oct. 6, 1918	250
Infirmiry, 2d Battalion.....	Archangel.....	do.....	Nov. 21, 1918	40
American Red Cross (annex).....	do.....	Sept. 7, 1918	June 3, 1919	30
American Red Cross hospital.....	do.....	Sept. 10, 1918	June 20, 1919	85
Detention hospital.....	Seletskoe.....	Sept. —, 1918	May 26, 1919	80
Field Hospital No. 337, detachment A.....	Beresniki.....	Sept. 25, 1918	June 10, 1919	100
Detention hospital.....	Obozerskaya.....	Sept. 29, 1918	Dec. 1, 1918	25
Convalescent hospital.....	Archangel.....	Oct. 8, 1918	June 13, 1919	225
Field Hospital No. 337, detachment B.....	Shenkursk.....	Oct. 19, 1918	Jan. 25, 1919	100
Detention hospital.....	Shegovari.....	Nov. 9, 1918	Jan. 26, 1919	10
Do.....	Pinega.....	Dec. 6, 1918	Apr. 8, 1919	200
Do.....	Ust Vaga.....	Jan. 29, 1918	June 11, 1919	20
Field hospital, detachment B.....	Osmovo.....	Mar. 25, 1919	May 31, 1919	60
Field hospital, detachment C.....	Morjegerskaya.....	Apr. 17, 1919	May 10, 1919	20
Hospital barge No. 335.....	Toulgas.....	May 9, 1919	June 13, 1919	40
Aid station.....	Ust Padenga.....	(a)	(a)	10
Do.....	Malo Beresniki.....	(a)	(a)	10
Do.....	Chinovo.....	(a)	(a)	10
Do.....	Kurgomin.....	(a)	(a)	10
Do.....	Chamovo.....	(a)	(a)	10
Do.....	Kitsa.....	(a)	(a)	10
Do.....	Verst 435.....	(a)	(a)	10
Total bed capacity.....				1,375

* Dates not given, as these stations were occupied alternately by American and British medical personnel.

Number of hospitals, dressing stations, and aid stations maintained by United States

Army Medical Department, Sept. 5, 1918, to June 20, 1919.....	22
Number maintained by British Army medical service.....	26
Total bed capacity, United States Army.....	1,375
Total bed capacity, British Army.....	2,756

NOTE.—(1) Bed capacity is approximate, as emergency capacity varied widely in different localities; (2) hospitals were often maintained alternately by American and British medical personnel; the above figures represent as closely as possible hospitals, etc., under distinctive control of each Government; (3) 756 British beds were on H. M. H. S. *Kalyan*, which was used as a hospital while frozen in the ice during the winter, but left for England June 3, 1919.⁸

Total admissions to hospital (all causes).....	2,352
Total discharged to duty.....	1,706
Transferred to other hospitals.....	12
Evacuated to England.....	527
Remaining June 20, 1919.....	3
Died.....	104
Total.....	2,352
Total casualties not admitted to hospital:	
Killed in action.....	82
Accidentally killed.....	5
Suicide.....	1
Total missing:	88
No information.....	36
Heard from as prisoners.....	3
Later released by enemy.....	4
Later reported dead.....	2
Total casualties.....	46
Total casualties.....	2,486

Total deaths:

Killed in action	82
Accidentally killed	7
Suicide	1
Died of wounds	30
Died of disease	72

192

Deaths from disease:

Lobar pneumonia	36
Bronchopneumonia	32
Enteritis, chronic, variety undetermined	1
Tuberculosis, chronic, pulmonary	1
Tuberculosis (psoas abscess)	1
Meningitis	1

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- (6) Report of activities and war diary, Field Hospital No. 337, Detachment B., prepared under the direction of the commanding officer, undated. On file, Historical Division, S. G. O.
- (7) Report of Medical Department activities, Onega sector, by Lieut. Col. E. Corning, M. C., undated. On file, Historical Division, S. G. O.
- (8) Annual Report of the Surgeon General, U. S. Army, 1920, 408, 409.

CHAPTER XLI

AMERICAN EXPEDITIONARY FORCES IN SIBERIA

The primary mission of the American forces which were sent to Siberia during August and September, 1918, was conducting an operation in connection with the Japanese and Czechoslovaks, which had for its object the clearing of the Ussuri-Amur Provinces of the Bolshevik bands which were present there under the leadership of armed Austro-German prisoners of war.¹

COMPOSITION AND STRENGTH

The American forces were made up of troops from both the Philippines Department and the United States.

On August 3, 1918, The Adjutant General cabled the commanding general, Philippines Department, to send by the first available United States Army transports the following troops to Vladivostok for station: The 27th and 37th Regiments of Infantry, one field hospital, one ambulance company, and a company of a telegraph battalion, fully equipped, including clothing for winter service. As the strength of the designated regiments was only about 2,700, the commanding general, 8th Division, Camp Fremont, Calif., had been instructed to select 5,000 infantrymen from the 8th Division, the number necessary to bring the Philippine regiments up to war strength. He had also been instructed to provide for the necessary staff corps.²

Authorization was granted by The Adjutant General to the commanding general, Philippines Department, to send to Vladivostok staff officers, with such intelligence personnel as might be deemed necessary for investigating the amount, character, and availability of supplies of all kinds, including subsistence, fuel, forage, and animals for the maintenance of the expeditionary forces.²

Subsequent orders (August 6-10) placed under the command of the commanding general, 8th Division, who had been designated to command the American Expeditionary Forces, Siberia, Evacuation Hospital No. 17 (then at Fort Sam Houston, Tex.), Base Hospital No. 93 (Camp Lewis, Wash., Medical Supply Depot No. 7 (San Francisco, Calif.), and authorized him to take with him to Vladivostok one veterinary field unit, certain officers of the Medical Department, as well as other personnel from headquarters of the 8th Division.²

The troops from the Philippines Department sailed from Manila on August 5 and 12, and the commanding general, A. E. F., Siberia, with a part of his staff and 1,889 enlisted personnel, departed from San Francisco on August 14. The contingent from the Philippines arrived at Vladivostok on August 15-16; that from the United States on September 2.²



FIG. 92.—Typical Russian barracks



FIG. 93.—Interior of Russian barracks, subsequent to renovation by American troops

Immediately after landing, a survey of Vladivostok was made with a view of determining the barracks, storehouse, hospital, and commercial resources available and adaptable to the needs of the troops. After a conference with the Russian authorities, barracks were selected, cleaned, and occupied, and other arrangements were made for the establishment of a military base.²

The maximum effective strength of the American Expeditionary Forces in Siberia was 8,831; this was in the month of September, 1918. This number, which included 286 officers, was gradually reduced, so that by the end of February, 1920, the month immediately preceding that in which our forces were withdrawn from Siberia, there were but 4,288. In detail, the strength of the subdivisions of the forces for the month of October, 1918, was as follows:³

Troops other than Medical Department

Organization	Officers	Men	Total
27th Infantry.....	55	3,522	3,577
31st Infantry.....	72	3,420	3,492
Others, including staff and detachments.....	81	744	825
Total.....	208	7,686	7,894

In, or in the immediate vicinity of, Vladivostok, the base, the troops varied in numbers between 1,000 and 1,800, the remainder being widely scattered.²

Medical Department

Organization	Officers	Men	Total
Field Hospital No. 4.....	5	81	86
Ambulance Company No. 4.....	1	144	145
Evacuation Hospital No. 17.....	21	236	^a 257
Medical Supply Depot No. 7.....	3	41	44
Personnel unassigned to units.....	33	133	166
Total.....	63	635	698
Grand total.....	271	8,321	8,592

^a This number does not include 27 nurses assigned to Evacuation Hospital No. 17.

From the beginning of the activities of the American forces in Siberia, both the commissioned and enlisted personnel of the Medical Department, proved insufficient in number. This was due to the fact that in August, 1918, the 27th Infantry left Vladivostok on a combined expedition to Habarovsk. Numerous stations and substations were established along the railroad for a total distance of many hundreds of miles. American forces garrisoned these practically the entire time our troops were in Siberia. This wide distribution of troops made the problem of providing medical attendance for them very difficult. The fact that medical officers and men generally lacked training was a further source of embarrassment; nor, widely scattered as they were, was central supervision possible, and this added to the difficulties. Then, too, railroads and telegraph lines frequently were interrupted. Connection, especially with Verkhne-Udinsk, 1,700 miles distant from Vladivostok, was most unsatisfactory. Medical records and returns, from which only the medical situation at distant points could be assumed, were very generally defective.⁴

The shortage of officers and trained enlisted personnel was intensified when in the fall of 1918 all emergency personnel was ordered to the United States for discharge. This caused so much additional embarrassment in the care of the disabled that it became advisable to repatriate cases of hernia and other operable defects which had existed prior to enlistment.⁴

The dental personnel was sufficient to give emergency treatment and rendered as satisfactory service as circumstances permitted, but thorough dental treatment of the command was not practical. Because of the exigencies of the service which required many stations and substations to make frequent changes of personnel, it was generally impracticable to complete treatments which were indicated.⁴

As measured by results, the veterinary personnel proved sufficient. The chief veterinarian reported no deaths from communicable diseases in animals from August 15, 1918, to June 30, 1919, and no outbreaks of such diseases (including glanders) during the six months ending December, 1919. No epidemic ever occurred among the animals, but a large number had to be killed just prior to departure on account of unserviceability.⁴

SANITARY UNITS

FIELD HOSPITAL No. 4

Field Hospital No. 4 arrived in Siberia, September 14, 1918. For the period of the occupation it had an average personnel of 5 officers and 70 enlisted men. With the ambulance company of the same number, it served at Habarovsk and at Verkhne-Udinsk-Beresovka, sailing for Manila on March 30, 1920. The establishments which it operated are discussed in other parts of this chapter.⁴

AMBULANCE COMPANY No. 4

Ambulance Company No. 4 arrived in Siberia on September 14, 1918. Its average personnel was 1 officer and 130 enlisted men. Of this enlisted personnel, 65 men were detached for service with the troops guarding the railroad on the Spasskoe-Razdelnoe and Shketevo sectors, about half of this number being on duty at the Habarovsk hospital from November, 1918, to June, 1919.⁴

The full complement of animal-drawn wagons and ambulances, with the required number of animals, was brought by the company. The wagons were old and worn and their need of repairs was so aggravated by the bad roads that there were never more than six in commission at any one time. By April, 1919, only two were serviceable, and three others were obtained. Two wagons were used at Habarovsk, later at Spasskoe, and two at Verkhne-Udinsk-Beresovka. By May, 1919, all the wagons and teams in serviceable condition were transferred to Evacuation Hospital No. 17, Vladivostok, many having been condemned. There were four "White" motor ambulances, all of which were serviceable on June 30, 1919, after constant use since September 14, 1918, but these vehicles, which saw very hard service over very rough roads, were not



FIG. 94.—Medical ward, Evacuation Hospital No. 17



FIG. 95.—Interior of surgical ward, Evacuation Hospital No. 17

sufficient to meet demands. Three motor ambulances loaned by the American Red Cross, furnished practically all ambulance transportation for the last two months of the expedition's stay in Siberia.⁴

EVACUATION HOSPITAL No. 17

Evacuation Hospital No. 17, which was used as the base hospital for the expedition, was organized at Fort Riley, Kans., March 4, 1918, was transferred to Fort Sam Houston, Tex., June 26, and sailed from San Francisco on September 2, 1918, arriving at Vladivostok on September 29. The next day it occupied barracks at Ulysses Bay. Its location was about 3 miles from the base, or from the limits of Vladivostok proper, and about 6 miles from headquarters, American Expeditionary Forces in Siberia. The only occasion when it was called upon to care for battle casualties was on June 25, 1919, after an attack by Bolsheviki upon an American detachment of 70 men. Forty-five of these were taken to the hospital, 19 dead and 27 wounded.⁴

The site of the hospital was a peninsula with Petroclus Bay on the east and Ulysses Bay on the west. Practically all the buildings used by the hospital were on one large hill, but they were widely separated, it being about a mile from the surgical ward to the nurses' home. Including headquarters and the nurses' home, the hospital proper occupied 10 buildings. The normal capacity of the hospital was 400 beds, with equipment for 500; and by crowding the enlisted men on duty and by utilizing some of their barracks space, the additional 100 were accommodated with fair satisfaction.⁴

In addition to the troops, this hospital cared for the sick from a German prison camp with approximately 500 prisoners, which was under American control, Young Men's Christian Association workers, Knights of Columbus, Russian railway engineers service corps, many patients from United States battleships stationed at Vladivostok, and a large number of civilians. Between October 18, 1918, and March 23, 1920, its period of operation as such, the total number of patients treated in Evacuation Hospital No. 17 was 8,100, including a great variety of cases, both medical and surgical. The maximum number of patients at the hospital at any one time was 500, on January 15, 1920. For the winter months of 1919 and 1920, the average number was about 300. Acute infectious diseases, though few in number, were seen in almost every form found in a temperate climate. This was due undoubtedly to the association of the troops with the civilian population, infectious disease among the latter being very prevalent and sanitary conditions very poor. Deaths from disease in this hospital numbered 86. It was finally closed on March 31, 1920.⁴

HOSPITAL TRAIN

The expedition, sent north along the Ussuri railway, necessitated a hospital train, for the distance was too great and the roads too poor to warrant

any other kind of transportation. After considerable trouble with the local authorities, two hospital cars were fitted up from two small freight cars, and later three others were obtained for the same purpose. Equipped with standee bunks from the U. S. Army transport *Warren*, with Sibley stoves, and with medical and surgical supplies from the regimental hospital of the 27th Infantry, these cars, with their operating personnel, were sent forward, complete, in about 19 hours. They proved satisfactory until the cold weather in November demanded another type of vehicle. Each of the new cars, then provided, was a unit complete in itself, with kitchen, lavatory, ward, and quarters for personnel. Operated with it was an additional car for baggage, fuel, and hospital supplies for the various posts along the line. The two together formed a small but complete hospital and medical supply train.



FIG. 96.—Improved hospital car, American Expeditionary Forces in Siberia

The hospital car itself was the conventional compartment type of the continental railroads, converted by standard Army equipment into a very satisfactory hospital of 12-bed capacity.⁵ These cars were operated continuously, though not without considerable difficulty and interference because of frequent attacks on trains and the destruction of bridges and telegraph lines. During the evacuation of patients, on June 12, 1919, the train was attacked at Knooring siding, 14 miles from Spasskoe, several rifle bullets passing through each of the cars, killing or wounding several passengers, but it proceeded to Habarovsk and evacuated patients, thence to the hospital at Spasskoe. The train, besides fulfilling its other purposes, made possible medical attendance to small detachments distributed along the railway line and the prompt removal of those found unfit for duty.⁴



FIG. 97.—Interior of car shown in Fig. 96



FIG. 98.—Converted hospital car, American Expeditionary Forces in Siberia

MEDICAL SUPPLY DEPOT NO. 7

Medical Supply Depot No. 7, organized in San Francisco in August, 1918, with a personnel of 3 officers and 45 enlisted men, was charged with securing and distributing medical department supplies.

The supply departments were never consolidated in Siberia, requisitions being handled as they were in the United States prior to December 31, 1918. The main medical supply depot, with a floor space of 18,900 square feet, was located in Vladivostok. The officer in charge was also the disbursing officer of the Medical Department, most of his disbursements being for labor and for laundry work. The Medical Department conducted a laundry here which took care of all hospital linen which could be sent to this point.⁴

MEDICAL DEPARTMENT SUPPLIES

The supplies furnished, with few unimportant exceptions, were ample for all the needs of the Medical Department. Indeed the quantities received in the initial shipment were more than actually required and, because of limited storehouse space, were a source of considerable embarrassment. Under proper authority, large quantities of medical supplies were turned over later to the American Red Cross.⁴

The only defect in the quality of the supplies was that the biological products at first were received from the United States so short a time before the date of the expiration of valency that they were no longer potent. This condition was corrected later. A small quantity of vaccines was purchased locally.⁴

The methods of packing shipments from the United States sometimes proved unsatisfactory, and certain articles were received in a badly damaged condition. The following hospitals and infirmaries received their initial equipment from the depot, as well as numerous replacements issued from time to time, as required: Evacuation Hospital No. 17; United States military hospitals at Habarovsk, Spasskoe, Razdolnoe, Verkhene-Udinsk, Kharbin; German prison camp infirmary; emergency hospital, base, and line of communications; military hospital, allied mine guard, Sauchian mines infirmary, camp infirmary, 31st Infantry, Shkotovo; infirmary, Company K, 31st Infantry, Ugolnoya; Hospital Train No. 1.⁴

The method of transporting supplies by rail proved very satisfactory, especially from Vladivostok to Habarovsk and to points between, for the medical supply depot car which was attached to the hospital train in November, 1918, solved the problem of forwarding supplies to stations on the railroad, without delay. This car served two purposes: It was loaded with medical supplies going from Vladivostok, and on the return trip was used as a baggage car for patients. It also brought soiled linen from the hospitals to the hospital laundry at Vladivostok.⁴

ACTIVITIES

The work of the American expedition in Siberia may be divided into the following phases:¹ (1) The operation in connection with the Japanese and

Czechoslovaks for the purpose of clearing the Ussuri and Amur Provinces of Bolshevik bands. This phase really terminated when the command went into winter quarters in the fall of 1918. (2) The period of garrison duty between the close of the allied campaign, in the fall of 1918, and the assumption of the duty of the protection of the Siberian railways (April 14, 1919), by the Allies under the interallied railroad agreement. (3) The railroad guard.

THE SHMAKOVKA TO HABAROVSK AND THE AMUR CAMPAIGNS²

American participation in allied operations in Siberia, which was destined to play a very minor part, was begun at a time when the situation may be described thus: The Czechoslovaks along the Ussuri River, now supported by detachments of Cossacks, British, French, and Japanese, had been rather severely defeated and were in a somewhat precarious situation. Allied assistance was rapidly developing, however. The enemy was definitely confined to two sides of a triangle, with Habarovsk at the apex. Both ends of the base of the triangle, Chita and Vladivostok, along the Chinese Eastern Railway, were easily within the grasp of the Japanese forces. At the mouth of the Amur and in Peter the Great Bay, allied naval strength effectively controlled any possible approach by water of assistance to the enemy; the railroads from Vladivostok to Nikolsk and thence westward through Manchuria and the junction of the Chinese Eastern Railway with the Trans-Siberian Railway were meshes in the net which confined the enemy to a section of the valley of the Amur.²

On August 26, 1918, the 27th Infantry was directed to join the allied forces at the Ussuri front, reporting to the Japanese general commanding. The troops left on three trains composed of box cars, arriving at Sviagina the following day. Here the regiment was directed to maintain its position, and all the railway cars which had been used by it, save supply, hospital, ammunition, and officers' cars, were then turned over to the Japanese forces.²

On August 30 the regiment began its march by road to Ussuri, at which place it arrived on September 4. Here it was directed to remain until further orders. After the Japanese troops had occupied Habarovsk, a verbal order was received by the commanding officer, 27th Infantry, directing one company of that regiment to proceed by train to Habarovsk, to participate in the formal occupation of that city. The company designated entrained that day and arrived at Habarovsk on the day following.²

At 5 p. m., September 6, orders were issued by the allied commander in chief, virtually indicating the termination of the Ussuri campaign and the inauguration of a new movement, which had for its purpose the clearing of the Amur Valley of the enemy.²

By the end of the first week in September the position of the enemy in eastern Siberia had been flanked from both sides. The Ussuri campaign and the capture of Habarovsk, September 5-6, completed the shutting in of the enemy and his confinement to the Amur Valley between the confluence of the

Onon and the region west of Habarovsk.² With Blagovestchensk and the destruction of the remaining Bolshevik forces as the objective, a concerted attack from all sides was inaugurated during the week of September 5-12, 1918. Japanese forces, part of the Japanese 12th Division, with Company E, American 27th Infantry, moved west from Habarovsk up the Amur. These forces of Infantry, however, had very little to do, for the advance of the Japanese cavalry troops was all that was necessary to sweep away the enemy.²

To replace the Japanese troops which had moved out of Habarovsk the American 27th Infantry, less Company E, was directed to take station at Habarovsk. This movement began on September 14, and was completed on the 16th, on which date Company C and some recruits for Company E were dispatched to join the troops moving toward Blagovestchensk. On September 20 Companies A, B, and D entrained for points west of Habarovsk, along the railroad, for guard duty at different stations.²

Companies C and E were relieved from guard duty west of Habarovsk and joined the 27th Infantry at Habarovsk on October 11, 1918. Somewhat later, November 10, Company C was dispatched to Spasskaya for guard duty, and Company E, on November 12, proceeded to Kraskaya Retchka, south of Habarovsk, for duty as prison guard over enemy prisoners. Companies A, B, and D also were sent on November 15, after being relieved from railroad guard duty west of Habarovsk, for station at Spasskaya. The remainder of the regiment remained in barracks at Habarovsk.²

HABAROVSK EXPEDITION

MEDICAL DEPARTMENT ACTIVITIES

Coincidentally with the departure of the troops from Vladivostok toward the north on August 5, 1918, it became necessary not only to provide for their care in the field but also for the evacuation of their sick and wounded to the base being established at Vladivostok.⁵

At Habarovsk a military hospital was established, staffed by the personnel of Field Hospital No. 4, one-half of the personnel of Ambulance Company No. 4, and the Medical Department detachment which accompanied the 27th Infantry. The hospital was opened on November 11, with a capacity of 100 beds, and continued in operation until the departure of the troops to Spasskoe on June 20, 1919, when its material, personnel, and patients were transferred to Spasskoe military hospital. Unfortunately the Habarovsk hospital was cramped for space, and it was quite difficult to make it function satisfactorily. A number of slight cases had to be treated in quarters. When taken over by the American troops, the hospital buildings were in deplorable condition, necessitating much repair work and interior renovation. The main hospital building was piped for water, and a small drain pipe connecting with a cess pool was constructed by our troops, with the aid of Russian laborers. The hospital proper consisted of four separate buildings somewhat apart from one another. The main building, of brick and two stories high, accommodated the patients.⁵

Infectious diseases in this area were isolated and treated in a large building some distance from the main hospital. This was of two-story construction, the lower story being destined for an isolation and convalescent hospital. It was well adapted for the purpose.⁴

A prison hospital of 100 beds was established on November 8, 1918, at Krasnaya Retchka, 13 miles from Habarovsk, where one company of the 27th Infantry was stationed as guard over some 1,800 prisoners of war.⁴

SUCHAN MINES

To protect the region some 75 miles east of Vladivostok, from which much of the coal supply for the Priamur Provinces was derived, against local disturbances and disorder from the unsettled political condition, an



FIG. 99.—Russian barracks in Habarovsk, used as an isolation hospital by the American Expeditionary Forces in Siberia

allied mine guard was established in September, 1918. To this was assigned one company of the 31st Infantry. The troops arrived at Suchan September 12, met with no opposition and were quartered in the town hall. Nothing worthy of note occurred in the occupation of the district; the inhabitants were friendly.⁵

THE SIBERIAN RAILWAYS

Prior to the arrival of the American Expeditionary Forces in Siberia, a corps of American railway men had landed at Vladivostok with a view to assisting in the rehabilitation of Siberian railways. However, since they had no authority, these Americans could do little more than give advice; so, to put the railway in proper shape, the interallied railway agreement was adopted on April 14, 1919; and the railway was divided into sectors for guarding. The sectors assigned to the United States were: (1) Vladivostok, inclusive, to

Nikolsk-Ussuri, inclusive, and including the branch line to Suchan mines; total miles, 144. (2) Spasskoe, exclusive, to Ussuri inclusive; total miles, 70. (3) Verkhne-Udinsk, inclusive, to Baikal City, inclusive; total miles, 265. This was later changed to Verkhne-Udinsk to Mysovaya, including 102 miles; total mileage being 316.¹

VERKHNE-UDINSK SECTOR

About the middle of April orders were received from American headquarters in Vladivostok directing the 3d Battalion of the 27th Infantry to take station at Verkhne-Udinsk in the Lake Baikal sector. Companies A and B had already been ordered from Spasskoe and had taken station in this sector late in March. By May 15 all the companies of the 3d Battalion had reached Verkhne-Udinsk. During June detachments were sent westward and took station at the following points: Mostovi, Tantaurovi, Selenga, Posolskaya, and Mysovaya. After the arrival of the Americans in this sector there was no case of interference with traffic on the railways or with connections by wire.² No quarters for our troops could be secured in Verkhne-Udinsk, consequently, in September, headquarters and the entire command, excepting the necessary detachments along the railroad, took station at Beresovka, a small station 8 miles west of Verkhne-Udinsk. From the middle of September to the middle of November all efforts were concentrated on the preparation of the barracks there against the coming winter.³

Early in January orders were received to withdraw the troops to Vladivostok preparatory to departure from Siberia.⁴

MEDICAL DEPARTMENT ACTIVITIES

Field Hospital No. 4, which had moved with the 27th Infantry from Habarovsk, occupied the floored and framed tents which provided accommodations for patients while the troops were in camp at Verkhne-Udinsk. Later, it was established at Beresovka in barracks buildings which were thoroughly cleaned, refloored, and whitewashed before occupancy.⁴

During the summer of 1919 about 75 American Red Cross nurses were stationed in Verkhne-Udinsk, in consequence of the approaching collapse of the Kalchak government. The volunteer services of some of these nurses were accepted in the hospital, its commanding officer providing them comfortable tents and a good mess. Between November 15, 1919, and January 15, 1920, 12 of these nurses who had remained in Verkhne-Udinsk were asked for by the commanding officer, 27th Infantry, to assist in the care of patients suffering from influenza, it having become epidemic among the troops. Quarters were furnished and meals were provided in the officers' mess, the cost being refunded by the American Red Cross, which in turn planned to seek reimbursement from the Medical Department of the Army.⁴

SPASSKOE SECTOR

During the last days of May and the first half of June, 1919, the 2d Battalion, 27th Infantry, was moved from Habarovsk to the Spasskoe Sector.

Two companies of the 31st Infantry had been stationed at Spasskoe, with Companies C and D of the 27th Infantry, but upon arrival of the battalion from the north it took station in and near Vladivostok.⁶

In the latter part of May, 1919, Companies C and D took station in little villages just north of Spasskoe. They were later, by the middle of June, joined by Companies E and F. This left Company H at Spasskoe, the headquarters for that sector.

MEDICAL DEPARTMENT ACTIVITIES

During the month of November, 1918, a military hospital of 50 beds had been opened at Spasskoe, which now became headquarters of the medical service of the sector. Increased on June 20, 1919, to a bed capacity of 100 beds, this hospital provided comfortable accommodations for the entire sector. In June the occasional encounters of the troops with small bands of partisans, which also attacked passenger trains, taxed the hospital to the utmost. The hospital was closed on January 9, 1920, when troops left for Vladivostok to sail for Manila.⁴

VLADIVOSTOK-NIKOLSK-USSURI SECTOR

The 31st Infantry was stationed in Vladivostok, on the Vladivostok-Razdolnoe sector and on the Ugolnaya, Shkotovo, and Suchan mines sectors. Also a company of this regiment was sent to Harbin in October, 1918.⁷

MEDICAL DEPARTMENT ACTIVITIES

An infirmary was opened at Ugolnaya in May, 1919, and closed October 6, 1919, and a hospital was opened at Razdolnoe in November, 1918, and closed March 7, 1920, on which date the troops were returned to Vladivostok preparatory to embarkation for Manila. A hospital at the Suchan mines was opened on September 11, 1918, and closed August 19, 1919, when this command was transferred to Vladivostok. Frequent attacks by partisans were made upon the troops, who during the months of June and July made a number of punitive expeditions into the surrounding country and suffered a few casualties. The wounded were treated in Vladivostok at Evacuation Hospital No. 17. A 40-bed hospital was opened at Sehotoval on April 23, 1919, and cared for the patients from four substations. It was closed on January 12, 1920, troops leaving on that date for Vladivostok, en route to Manila.⁴

On June 25, 1919, the 70 men stationed at Romanovka were surprised at daylight by a large force of partisans, and suffered a loss of 19 men killed and 26 wounded. The hospital train had been sent up the railroad line the day before to distribute supplies and to be held in readiness for the evacuation of sick and wounded. On notification of the attack, received while the train was at Kanzaug, 20 miles distant, it was hurried to Romanovka, arriving there while the attack was still in progress. The wounded arrived safely at Vladivostok at 7 o'clock that night.⁴

REFERENCES

- (1) Operations to June 30, 1919, commanding general, A. E. F., Siberia, September 25, 1918.
- (2) An account of the American Expeditionary Forces in Siberia, August, 1918, to March, 1919, by Captain Lawrence B. Packard, U. S. A., April, 1919. On file, Historical Section, the Army War College.
- (3) Returns from the American Expeditionary Forces in Siberia to The Adjutant General August, 1918, to March, 1920.
- (4) Report of the activities of the Medical Department with the A. E. F., Siberia, during occupation of Siberia, submitted by Col. W. F. Lewis, M. C., chief surgeon, to the commanding general, A. E. F., Siberia, March 31, 1920. On file, the Historical Section, the Army War College.
- (5) Report of Medical Department activities, A. E. F., Siberia. By Col. James S. Wilson. M. C., chief surgeon, undated. On file, Historical Division, S. G. O.
- (6) Report of operations, 27th Infantry, May 2, 1919, to January 29, 1920.
- (7) Report of operations, 31st Infantry, August 21 to December 31, 1918, July 15, 1919.

APPENDIX

ABBREVIATIONS

The following abbreviations are used either in the text or in the reference appended thereto:

A. A., American ambulance.	G-4-B, group under G-4, to which all matters affecting the Medical Department were referred.
A. A. S., American Ambulance Service.	G. M. C., General Motors Company.
A. C., Army Corps.	G. O., General Orders.
A. E. C., American embarkation center.	L. B., Litter bearers.
A. E. F., American Expeditionary Forces.	L. C., Line of Communications.
A. G. O. S. D., Adjutant General's Office, Statistical Division.	M. M. D., Manual for the Medical Department.
A. P. M., Assistant Provost Marshal.	M. T. C., Motor Transport Corps.
A. R. C., American Red Cross.	N. C. O., Noncommissioned Officer.
A. W. C., Army War College.	P. C., Post Command.
A. W. O. L., Absent without leave.	Q. M. C., Quartermaster Corps.
B. E. F., British Expeditionary Forces.	S. C., Sanitary Corps.
B. H., Base Hospital.	S. S. U., Sanitary Service Unit.
Boy., Boyav.	Sn. Tn., Sanitary Train.
C. A., Colonial Army.	Sgts., Sergeants.
D. C. P., Division chasseur à pied (light infantry).	S. G. O., Surgeon General's Office.
D. I., Division of Infantry.	S. O., Special Orders.
Fme., Ferme (farm).	S. O. S., Services of Supply.
F. O., Field Orders.	T. M. B., Troop Movement Bureau.
Gde., Grande.	T. O., Tables of Organization.
G. H. Q., General Headquarters: G-1, G-2, G-3, G-4, G-5, Sections of General Staff, A. E. F.	Tr., Tranchée (trench).

BRIEF HISTORIES OF COMBAT DIVISIONS

THE 1ST DIVISION^{1, 2}

(Regular Army. Insignia: A crimson figure 1 on a khaki shield)

The 1st Division was organized in June, 1917, from troops of the Regular Army which, at that time, were much scattered, most of them being in service on the Mexican border. All were at peace strength and were raised to war strength by transfers from other units. The division was not concentrated until arrival in France. The organization was as follows:

- 1st Infantry Brigade:
 - 16th and 18th Infantry; 2d Machine Gun Battalion.
- 2d Infantry Brigade:
 - 26th and 28th Infantry; 3d Machine Gun Battalion.
- 1st Field Artillery Brigade:
 - 6th and 7th (light), 5th (heavy) Field Artillery; 1st Trench Mortar Battery.
- 1st Machine Gun Battalion.
- 1st Engineers.
- 2d Field Signal Battalion.
- Trains:
 - 1st Sanitary Train (Field Hospitals Nos. 2, 3, 12, 13, and Ambulance Companies Nos. 2, 3, 12, 13).

The first troops sailed from Hoboken on June 13, 1917, and disembarked at St. Nazaire on June 26, 1917. Division headquarters landed on June 27, 1917. The remainder of the troops followed in rapid succession, except the supply train, which did not arrive in France until May 6, 1918. The division (less Artillery) was sent to the Gondrecourt area for training. For a similar purpose the Artillery brigade went to Valdahon. En route from St. Nazaire to Gondrecourt, the 2d Battalion, 16th Infantry, participated in the Fourth of July parade in Paris, the first public appearance of American troops in France.

Field Hospital No. 13 and Ambulance Company No. 13 arrived at St. Nazaire, with the division, on June 27, 1917. Headquarters field hospitals, headquarters ambulance sections, Field Hospitals No. 2 and No. 12, and Ambulance Companies No. 2 and No. 12 arrived September 26, 1917. Field Hospital No. 3 and Ambulance Company No. 3 arrived December 29, 1917. While the division remained in the vicinity of St. Nazaire, all sick were cared for by a French military hospital, in that city. Later a part of this hospital was turned over to us and staffed by American medical officers, nurses, and enlisted men from Base Hospital No. 18 (Johns Hopkins), which had arrived in the same convoy with the 1st Division. On July 11, 1917, Field Hospital No. 13 and Ambulance Company No. 13 (the only sanitary train units in France at that time) proceeded under their own transportation to the training area around Gondrecourt, arriving there July 15, 1917. The field hospital established a hospital in frame barracks at Gondrecourt, which was expanded by additional equipment, and designated Camp Hospital No. 1. It provided permanent care for all sick, there being no hospital, except a small French one, to which it could evacuate. When, later (in September, 1917), Base Hospital No. 18 was established at Bazoilles, Camp Hospital No. 1 evacuated all its serious sick and operative cases to that hospital. Field Hospital No. 13 was relieved by Field Hospital No. 12 on October 21. On November 7, Field Hospital No. 12 was relieved and a permanent personnel was assigned to Camp Hospital No. 1. On January 25, 1918, Field Hospital No. 3 took over the camp hospital and operated it until April 3, 1918, when it was taken over by the Services of Supply. The training area, consisting of 32 towns, was evacuated in turn by Ambulance Company No. 13, stationed at La Neuville, and by Ambulance Company No. 12, stationed at Hevilliers; their evacuation included that to the base hospital. The remainder of the sanitary train was located at Villiers le Sec, Hevilliers, and La Neuville.

Luneville Sector, October 21, 1917, to November 20, 1917.

On the night of November 29, the division was withdrawn from the line to the Gondrecourt area, where it continued its training until January 15, 1918.

Ansauville Sector, January 15 to April 3, 1918.

Cantigny Sector, April 25 to June 8, 1918.

Montdidier-Noyon operation, June 9-13, 1918.

Cantigny Sector, June 14 to July 7, 1918.

Aisne-Marne operation, July 18-23, 1918.

The division, after its relief from the Soissons operation, was again moved eastward. On August 7, 1918, it took over the quiet Saizerais sector, near Toul. Here it remained until August 24, when it was withdrawn to Vaucouleurs, in preparation for a new offensive.

When the division moved into the Saizerais sector, on August 7, 1918, the sanitary train was disposed of as follows:

Field Hospital No. 2 was stationed at Avrainville for contagious and venereal diseases. Field Hospital No. 3, at Griscourt, functioned as triage. Field Hospital No. 12, at Roziers-en-Haye, was for surgical cases. Field Hospital No. 13, at Rogeville, took care of sick and skin diseases.

A dressing station was established by Ambulance Company No. 12 at Jezainville; United States Army Ambulance Service Section 649, assigned to the division, took station at Pont-a-Mousson and evacuated wounded from the front to the dressing station. Divisional ambulance companies evacuated from the dressing station to the triage and hospitals

at Toul. During its stay in this sector, intensive efforts were made to free the division from lice and to overhaul all motor equipment. Field Hospital No. 2, heretofore animal drawn, was motorized, thus rendering all these units equally mobile. When the division moved to the vicinity of Vaucouleurs, most of the sanitary train was located at Pierrot. Field Hospital No. 12 was established at Burey-en-Vaux for the sick and Field Hospital No. 13, at Sauvigny, for skin and venereal diseases. All seriously sick were evacuated to Base Hospital No. 66 at Neufchateau.

Here the division engaged in maneuvers, simulating those it expected to employ in the coming St. Mihiel operation. Field hospitals and dressing stations were actually established and moved in conformity with the general problem worked out by the division.

Ambulance company equipment was increased by the addition of large quantities of dressings, litters, splints, and blankets, each ambulance now carrying 12 blankets, 6 to 8 litters, and a supply of leg and arm splints. Arrangements were made for replacing supplies unloaded with patients. Dressing-station supplies were supplemented by such additional articles as antigas suits and gloves, sodium bicarbonate (for mustard gas), hot water bottles, shell-wound dressings in three sizes, issued to litter-bearer detachments, and additional tourniquets, furnished to stations and bearers.

The Medical Department belt for enlisted men was abandoned at this time and small pouches were issued in their stead. The former would not hold the larger dressings now required, nor did it permit the wearer to carry a litter. Each field hospital now carried 70 litters and 500 or more blankets.

After training and reequipment the 1st Division moved to the St. Mihiel salient, and the entire sanitary train was assembled at Raulecourt.

St. Mihiel operation, September 12-13, 1918.

Meuse-Argonne operation, September 26 to November 11, 1918.

Army of Occupation.

Division headquarters embarked at Brest on August 25, 1919, and arrived at New York, September 5, 1919.

DIVISION SURGEONS

Col. Bailey K. Ashford, M. C., June 8, 1917, to October 23, 1917.

Col. Herbert G. Shaw, M. C., October 24, 1917, to July 13, 1918.

Col. James I. Mabee, M. C., July 14, 1918, to February 16, 1919.

Col. Perry L. Boyer, M. C., February 17, 1919, to June 18, 1919.

Lieut. Col. Edwin B. Maynard, M. C., June 19, 1919, to August 27, 1919.

THE 2D DIVISION^{1, 4}

(Regular Army and Marines. Insignia: An Indian head on a white star background)

The 2d Division was organized in October, 1917, from troops of the Regular Army and the Marine Corps. The organization was as follows:

3d Infantry Brigade:

9th and 23d Infantry; 5th Machine Gun Battalion.

4th Infantry Brigade:

5th and 6th Marines; 6th Machine Gun Battalion.

2d Field Artillery Brigade:

12th and 15th (light), 17th (heavy) Field Artillery; 2d Trench Mortar Battery.

4th Machine Gun Battalion.

2d Engineers.

1st Field Signal Battalion.

Trains (2d Sanitary Train: Field Hospitals Nos. 1, 15, 16, 23, and Ambulance Companies Nos. 1, 15, 16, 23).

The first unit of the division arrived in France June 27, 1917; the last, March, 15, 1918.

For training purposes, the infantry was sent to the Department of Haute Marne and division headquarters was established at Bourmont. Upon arrival of the artillery, in December and January, 1918, it was sent to Valdahon for instruction. During the latter month, all elements of the division were assembled in the vicinity of Bourmont for final training.

On March 16 the division went into a quiet portion of the line between Verdun and St. Mihiel—the Toulon—Troyon sectors. Here the troops were mingled with the French, and took part in numerous minor operations; on the night of April 13–14 the 9th Infantry repulsed an unusually strong raid with complete success. The division remained in this sector until May 13 when it moved to the vicinity of Chaumont-en-Vexin (Oise) for further training preparatory to relieving the 1st Division, near Montdidier. But on May 27 the Germans began their offensive between the Aisne and the Marne, and the division was placed at the disposal of the French.

Field Hospital No. 15 and Ambulance Company No. 15 arrived at Brest December 20, 1917. Field Hospital No. 1 and Ambulance Companies No. 1 and No. 23 arrived at St. Nazaire December 22, 1917. Field Hospital No. 16 and Ambulance Company No. 16 disembarked at Brest February 5, 1918. Field Hospitals Nos. 1, 15, and 23 were sent to Bourmont for training where Field Hospital No. 15 opened Camp Hospital No. 3 for the divisional sick. It evacuated contagious cases to Neufchateau and special cases to Base Hospital No. 18, at Bazoilles. Later it also evacuated cases to the hospitals at Vittel-Contrexeville. Field Hospital No. 16 (animal drawn), upon arrival in France, was sent to Blois, where it remained until March 14, 1918.

The ambulance companies, with the exception of Ambulance Company No. 16, were stationed at Rozieres, where they underwent training and evacuated sick. Ambulance Company No. 16 was at Blois, where it trained and performed fatigue and general duty. On March 16, the sanitary train arrived in the Toulon-Troyon sector.

Field Hospital No. 1 took station at Fontaine Brillante, where the French operated a triage. Here they assisted in operating the French dressing station, until given barrack space for the sick and wounded of the division. From here patients were evacuated to the French hospitals in the rear.

Field Hospital No. 15 was located at Genicourt, where the personnel assisted the French in the operation of a triage until April 2, when this hospital was sent to Souilly to assist in a French evacuation hospital. Later, three wards were turned over to Field Hospital No. 15 for divisional casualties. Evacuations from this hospital were made by hospital trains to base hospitals in the interior.

Field Hospital No. 23 took over a French triage at Ambly. The station had a capacity of 100 beds and good operating and sterilizing rooms. On April 10, the unit moved to Fontaine Routon, where it worked in conjunction with a French mobile surgical unit. On April 26, it moved to Maujouy, where it took up similar duties.

Field Hospital No. 16 arrived in this sector by rail from Blois, on March 13, and was sent to a French hospital at Maujouy for duty and training. On April 10, one officer and 20 men of the unit were assigned to duty at a French hospital at Petit Monthairon. On April 26, it reopened the triage (formerly operated by Field Hospital No. 23) at Ambly, which it operated until May 9.

Ambulance Company No. 1, was sent to Fontaine Brillante, from which place it furnished ambulance and litter-bearer service for the left area of the sector. On March 31, the company moved to La Chiffoure, but continued the same service.

Ambulance Company No. 15, was located at Genicourt, whence it furnished ambulance and litter-bearer service for that portion of the sector.

Ambulance Company No. 23 took station at Troyon, and served the right area of the sector.

Ambulance Company No. 16 arrived in the sector on March 24, from Blois, and took station at Revigny. The majority of its personnel was distributed among the other three companies for training and instruction. Details were also sent to French hospitals at Dieue and Petit Monthairon. The animals and equipment of this company were received the latter part of April.

Medical supplies were handled by the headquarters ambulance sector. Requisitions were filled by the divisional medical supply depot at Bourmont.

Evacuations, at first, were made through the French triage near the front at Genicourt, on the right, and at Fontaine Brillante, on the left. About April 1, divisional triages were established at Ambly and Fontaine Brillante.

Patients were evacuated to the following hospitals:

Seriously wounded and all officers: French hospital at Petit Monthairon.

Wounded: French hospital, Maujoue.

Gassed: French hospital, near Rambluzin.

Infectious: French hospital, Benoite Vaux.

Sick: To any division field hospital.

Evacuation: To French evacuation hospital at Souilly.

Aisne operation, May 31 to June 5, 1918.

Chateau-Thierry Sector, June to July 9, 1918.

On July 9, after having spent 40 days in action, which cost losses of 9,000 men, the division was relieved and moved to a reserve position along the line Montreuil—St. Aulde.

Aisne-Marne operation, July 18–25, 1918.

The division was in training in the Ormoy-Villers area until July 28, when it moved to the vicinity of Nancy. On August 6 it relieved a French unit in the Marbache sector, where it remained until relieved by the 82d Division, on August 16.

It then moved to the Colombey-les-Belles area, where active preparation for the impending St. Mihiel operation was taken up.

In the Marbache Sector the sanitary train took over various ambulance posts, dressing stations, and field hospitals from the French *Service de Santé*; its units were located as follows:

Field Hospital No. 1 and Ambulance Company No. 23 were at Dieulouard, the other hospitals serving troops east of the Moselle in a group of French hospital buildings at Millery with the other ambulance companies in their vicinity. Here Field Hospital No. 16 cared for the sick and Field Hospitals Nos. 15 and 23, formerly Unit No. 3, which joined at this time, formed a group which cared for surgical cases only. Because of the proximity of these formations to the front, no dressing stations were established, and the ambulances at night brought the wounded direct from the battalion posts. During the day, as the roads were under direct enemy observation, patients had to be brought back to ambulance heads by the litter-bearer squads assigned to the several battalions. The medical supply unit was located at Belleville, the railhead, and distributed supplies by ambulance in advance of the field hospitals.

The wounded were evacuated to Evacuation Hospital No. 1, at Sebastopol, a distance of 20 km. (12.4 miles) from the field hospitals and the sick to the evacuation hospitals at Toul.

St. Mihiel operation, September 12–16, 1918.

Meuse-Argonne operation, October 1–10, and October 22 to November 11, 1918.

Army of Occupation.

The division headquarters sailed from Brest July 25, 1919, arriving at New York August 3, 1919.

DIVISION SURGEONS ³

Col. Ralph S. Porter, M. C., November 7, 1917, to December 7, 1917.

Col. Charles R. Marrow, M. C., December 8, 1917, to July 19, 1918.

Col. John W. Hanner, M. C., July 20, 1918, to September 22, 1918.

Lieut. Col. Richard Derby, M. C., September 23, 1918, to January 7, 1919.

Col. W. A. Powell, M. C., January 18, 1919, to February 20, 1919.

Col. Orville G. Brown, M. C., March 4, 1919, to June 18, 1919.

Col. Perry L. Boyer, M. C., June 19, 1919, to August 8, 1919.

THE 3D DIVISION^{1, 2}

(Regular Army. Insignia: Three white stripes superimposed diagonally on blue square)

The 3d Division was organized in November, 1917, at Camp Greene, N. C., from troops of the Regular Army, and by transfers from other units. The organization was as follows:

5th Infantry Brigade:

4th and 7th Infantry; 8th Machine Gun Battalion.

6th Infantry Brigade:

30th and 38th Infantry; 9th Machine Gun Battalion.

7th Machine Gun Battalion.

3d Field Artillery Brigade:

10th and 76th (light), and 18th (heavy) Field Artillery; 3d Trench Mortar Battery.

6th Engineers.

5th Field Signal Battalion.

Trains (3d Sanitary Train, consisting of Field Hospitals Nos. 5, 7, 26, 27, and Ambulance Companies Nos. 5, 7, 26, 27).

The first unit to go overseas was the 6th Engineers, which was designated for early duty in France. It arrived there December 20, 1917. A detachment of the regiment serving with the British occupied active sectors and took part in the operation known as the Somme defensive. Division headquarters arrived in France on April 4 and the last unit May 12, 1918.

For training purposes the division (less artillery and engineers) was sent to the Chateaufvillain area, the artillery going to Coetquidan for the same purpose. The artillery rejoined the division July 6, 1918, and was present with it in the Marne operation, and the Aisne-Marne operation, remaining with the division until September 7, 1918, when it was detached for participation in the St. Mihiel operation with the Fourth Corps. The artillery brigade rejoined the division September 15, 1918, and from this time until the armistice served as divisional artillery either with the 3d or with some other division.

On May 27 the Germans began their offensive between the Aisne and the Marne, and the 3d Division was placed at the disposal of the French. Unfortunately the history of the sanitary train in the training sector is not available.

Aisne-Marne operation, July 18-30, 1918.

Chateau-Thierry Sector, June 6 to July 14, 1918.

Champagne-Marne operation, July 15-18, 1918.

Aisne-Marne operation, July 18-30, 1918.

The division was relieved on July 30 by the 32d Division, and assembled south of Chateau-Thierry. On August 2 the 6th Brigade was dispatched to support of the French Third Army Corps operating toward the Vesle. It was relieved from this duty on August 10 and rejoined the division, which had gone into rest area near Gondrecourt.

On September 4 the division proceeded to the Vaucouleurs area preparatory to taking part in the St. Mihiel operation. In this operation it was in the reserve of the Fourth Army Corps.

After its relief from the Aisne-Marne operation, the sanitary train moved to the vicinity of Bonet, where it resumed training and received replacements. Field Hospital No. 5 opened a scabies hospital at Demange on August 22. On September 4 the entire sanitary train proceeded to the St. Mihiel sector and located near Boucq, where it remained in reserve during the St. Mihiel operation. After this action, the train moved to the Bois de la Cote, where it remained in camp until the beginning of the operation on September 26.

Meuse-Argonne, September 26 to November 11, 1918.

Army of Occupation.

The division headquarters sailed from Brest on August 14 and arrived in New York August 23, 1919.

DIVISION SURGEONS³

Col. William R. Eastman, M. C., November 24, 1917, to July 14, 1918.

Col. Frederick S. Wright, M. C., July 15, 1918, to November 20, 1919.

THE 4TH DIVISION^{1, 6}

(Regular Army. Insignia: A green four-leaved ivy about a green circle)

The 4th Division was organized in December, 1917, at Camp Greene, N. C., from units of the Regular Army.

The organization was as follows:

7th Infantry Brigade:

39th and 47th Infantry; 11th Machine Gun Battalion.

8th Infantry Brigade:

58th and 59th Infantry; 12th Machine Gun Battalion.

4th Field Artillery Brigade:

16th and 77th (light), 13th (heavy) Field Artillery; 4th Trench Mortar Battery.

10th Machine Gun Battalion.

4th Engineers.

8th Field Signal Battalion.

Trains (4th Sanitary Train consisted of Field Hospitals Nos. 19, 21, 28, 33, and Ambulance Companies Nos. 19, 21, 28, 33).

The first unit to go overseas arrived in France May 10, 1918, the last, June 8, 1918. The transport *Moldavia*, carrying Companies A and B of the 58th Infantry, was torpedoed and sunk on May 23; 56 men of the two companies were lost.

The division (less artillery) was assigned to the American Second Army Corps, serving with the British, and was concentrated at Samer (Pas de Calais) for training. The Artillery brigade went to Camp de Souge near Bordeaux for the same purpose, and did not rejoin the division until the first week in August. Early in June, the division was placed at the disposal of the French and moved to Meaux (Seine et Marne), where training was continued nearer the front. During the German offensive of July 15 it was in reserve divided between the French Second and Seventh Corps between Soissons and Chateau-Thierry. Here it suffered its first battle casualties. While the division was in training with the British, casualties were cared for by British medical units.

The 4th Sanitary Train arrived in France in the early part of June, 1918, and joined the division at Meaux. On June 22 Field Hospital No. 33 established a hospital for the care of sick at Chateau Montebise, which it operated until July 6. Field Hospital No. 28 opened at Meaux on July 1. Ambulance companies arrived with no transportation and all casualties were evacuated by the French sanitary service.

Aisne-Marne operation, July 18 to August 6, 1918.

Vesle Sector, August 7-12, 1918.

On the night of August 11-12 the division was relieved by the 77th Division, and withdrew to the Boise de Dole and the Foret de Nesles, the Artillery brigade remaining in action until August 17. While in this sector, the sanitary train was billeted in Prez-sous-La-Fauche and Liffol-le-Petit. Field Hospital No. 33 opened in the latter station for care of the division sick. Intensive training schedules were resumed in preparation for the coming St. Mihiel operation.

St. Mihiel operation, September 14, 1918.

Meuse-Argonne operation, September 26 to October 22, 1918.

Army of Occupation.

The division returned to the United States in July, 1919; headquarters sailed from Brest July 24 and arrived in New York July 31.

DIVISION SURGEONS³

Col. Robert L. Carswell, M. C., December 9, 1917, to October 5, 1918.

Col. Paul Waterman, M. C., October 6, 1918, to August 3, 1919.

THE 5TH DIVISION ^{5, 7}

(Regular Army. Insignia: A red diamond)

The 5th Division was organized at Camp Logan, Tex., December 1, 1917, from units of the Regular Army. These being at peace strength, the shortage was made up by assignment of National Army men.

The following organizations composed the division:

9th Infantry Brigade:

60th and 61st Infantry; 14th Machine Gun Battalion.

10th Infantry Brigade:

6th and 11th Infantry; 15th Machine Gun Battalion.

13th Machine Gun Battalion.

5th Artillery Brigade:

19th and 20th (light), 21st (heavy) Field Artillery; 5th Trench Mortar Battery.

7th Engineers.

9th Field Signal Battalion.

Trains (5th Sanitary Train, Field Hospitals Nos. 17, 25, 29, 30, and Ambulance Companies Nos. 17, 25, 29, 30).

The first unit of the division arrived in France March 20, 1918, the last June 19. Bar-sur-Aube was selected as the training area for the infantry, while the artillery was sent to Valdahon for a similar purpose.

On June 1 the division was placed at the disposal of the French Thirty-third Army Corps, then operating in the Vosges. To this sector it was immediately moved. Here the troops were mingled with the French behind the lines for further training. June 14 the division entered the line with combat units, half French. The sector was quiet, but the division suffered its first casualties June 14.

On July 15 the division was transferred to the quiet St. Die sector, and on July 19 the command of this sector passed to the Americans. The artillery joined the division July 28, after having completed its training at Valdahon. In a local engagement of August 17 the town of Frapelle and Hill 451 were taken and held against counterattacks.

The division was relieved by the French August 26, and repaired to Arches, south of Epinal, for rest and training. From this point it moved to the vicinity of Luneville, August 28.

The 5th Sanitary Train did not arrive until June 20; but due to the urgent need of medical personnel and transportation, Field Hospital No. 161 and Ambulance Company No. 161, 41st (Depot) Division, were assigned to the 5th Division on May 11, 1918. These units opened Camp Hospital No. 42, at Bar-sur-Aube, for division sick. When the division moved to the Anould sector, in the Vosges, on June 2, 1918, Field Hospital No. 141 and Ambulance Company No. 141 were ordered to duty with French Evacuation Hospital 2/29 at Fraize. On June 8 Field Hospital No. 163 and Ambulance Company No. 162, of the 41st Division, reported for duty. The field hospital was assigned to French Evacuation Hospital 2/8 at Gerardmer and the ambulance company performed evacuation. These organizations were relieved from duty with the 5th Division during the latter part of July and early part of August.

Service in the Anould sector was of peculiar interest because of the character of the terrain and the close association with the French. The country was rugged, with but few roads leading through the mountain passes. Though steep, these roads were good, and at certain points narrow-gauge railways were sometimes available for the evacuations of wounded. As allied trenches were usually on the eastern slope of the hills, roads leading to them were under direct enemy observation and frequently were shelled, especially during a raid from either side. These circumstances prohibited the near approach of ambulances to the advance stations and required that the wounded be removed from them by hand carriage or wheeled litter for a distance of from 3 to 5 km. (1.8 to 3.1 miles) over steep

and winding trails. From one advance station it was necessary that eight bearers carry a wounded man for four hours before he could be placed on a vehicle. First aid was applied at battalion stations located in front-line trenches, and the patients were then taken by handcarriage or on wheeled litters through communicating trenches or over trails to the nearest point accessible by motor-cycle litter or ambulance. Ambulance centers were maintained near the hospitals, from 5 to 8 km. (3 to 4.9 miles) from the front. Here approximately two-thirds of the ambulances were parked, the others being posted at protected and accessible points as near the lines as possible. When casualties occurred, notice was telephoned to the hospitals and an ambulance was sent forward to the post which had been vacated by the ambulance sent to collect the casualties in question. Thus there was kept up a circuit of vehicles and prompt service, compensating for inability to maintain a number of ambulances at a forward post because of enemy airplane observation and direct fire. Animal-drawn transportation was not used in the American service in this sector. The use of wheeled litters and motor cycles for removal of the wounded in this rugged terrain is discussed in Chapter IV.

Small hospitals—practically posts for rest and emergency treatment—were installed at protected points, and here patients were retained until roads were passable or until, if seriously wounded, they had recuperated sufficiently to continue the journey. Regimental hospitals, where the less seriously sick and the slightly wounded were kept, were located at the base of the mountains. Back of these were the French evacuation hospitals where, under French command and instruction, our sanitary train personnel received training and rendered service. These units were the following: Fraize, French Evacuation Hospital, 2/28, 7 km. (4.2 miles) from the front, frequently shelled and later evacuated; Gerardmer, French Evacuation Hospital 2/8, 15 km. (9 miles) from the front by road, well situated in a large hotel; St. Die, Hôpital St. Charles, well equipped and located in the city hospital building, 7 km. (4.2 miles) from the front and too near to be used in time of activity; Bruyeres, French Evacuation Hospital 2/14, 25 km. (15 miles) from the front and therefore too distant for emergency work, though well equipped; Le Rudlin, Alpin Ambulance No. 305. Though frequently shelled, this unit was used for the immediate treatment of serious cases.

All these sanitary formations, in rear of the battalion aid stations—and even these if necessary—received French and American disabled alike.

From July 15 the division occupied the front east of St. Die, in the Vosges. Here, on August 17, about 2,500 men, including Companies L, M, and C of the 6th Infantry, with troops from other organizations, carried out a local attack which resulted in the capture of Frapelle and Hill 451. Resulting casualties numbered 418, but most of those due to gas occurred among troops in dugouts in the vicinity of the attacking troops.

The system of evacuation in the St. Die sector was similar to that described above. Ambulance centers were located at St. Die and Raon l'Etape, where in times of stress the vehicles available were augmented by ambulances from Evacuation Hospital No. 2. Evacuations were made to Field Hospital No. 29 and to St. Charles Hospital (French), at St. Die, to Field Hospital No. 17 and Hôpital Mixte (French), at Raon-l'Etape, and for nontransportables to Evacuation Hospital No. 2, Baccarat, and to Field Hospital No. 25 with French Evacuation Hospital 2/14 (French), at Bruyeres. From the southern front of the sector disabled men passed through the hospitals at St. Die, where Field Hospital No. 29 received the sick and the gassed and Hôpital St. Charles operated; the seriously sick from the entire sector were sent to Bruyeres. Casualties from the northern part of the line were sent to Field Hospital No. 17, which transferred seriously wounded patients to the Hôpital Mixte, at Raon-l'Etape. All other battle casualties, including gassed, were sent to Evacuation Hospital No. 2, at Baccarat. At each of the French hospitals French and American teams alternated in service.

During the Frapelle attack the regimental aid station of the 6th Infantry was located at Dijon, with aid stations at Nayemont, Chapelle Ste. Claire, Charmont, and Neuwillers. Seven medical officers and seventy-four enlisted men from the sanitary train were attached to the 6th Infantry to reinforce its medical personnel. Six ambulances, with litter squads

from Ambulance Companies No. 25 and No. 29, were posted at the stations mentioned above, and the remainder were held at the "alert" at St. Die, where Field Hospital No. 29 operated the triage.

No arrangements had been made at this time for details of litter bearers from the line, and use of bandsmen proved unsatisfactory. As regimental personnel was fully engaged in rendering first aid, it was decided that it should not be employed for bearer service, yet during a general engagement the details to the regimental service, from ambulance companies which were already fully occupied, proved inadequate.

Of the 261 gas casualties in the Frapelle attack, more than 50 per cent were so slightly affected that their removal to the rear was not necessary. The number mentioned included those suffering from gas fright, and also malingerers.

An information service was initiated at this time, which was utilized and developed in subsequent engagements. It is described as follows in the medical history of the 5th Division:

Information was furnished to the division staff every hour during times of activity, and less frequently—depending upon the character of action—as to the number and nature of casualties and the location from which they came. Such information was of value in confirming reports received from other sources and in forming an estimate of the relative gravity of the military situation at various points on the line, as well as the kind of shells and other means of warfare used by the enemy.

Information was required from regimental surgeons and others. Reports were sent to the division surgeon of the progress of the attack, the number and kind of casualties, the number of cases received at the hospitals, the need for supplies and anticipated casualties.

This information enabled the division surgeon in some instances to anticipate the needs of sanitary units at the front. Knowledge that gas shells were being used in quantity was an indication for obtaining a supply of blankets and additional uniforms. Before the request for these articles was received at headquarters the supplies were on their way to the front. Information regarding actual and anticipated casualties enabled officers at the triage and at other hospitals to plan work and distribute patients so that each case could receive attention at the earliest possible moment. * * *

Negative information was often of great value. Report that activity had subsided and that few or no cases were to be expected for a time was helpful in relieving the nervous strain of the hospital personnel and allowing at least a part of them to obtain much-needed rest. It was found of value not only for the hospitals but also for ambulance company troops.

Reports received from medical sources were of value to the operations section, G-3. These included statements concerning the character of wounds and injuries, estimates of number of wounded on the field, the presence of gas in certain areas, and general physical resistance of the men.

Information received through headquarters and transmitted to medical officers with the line included (a) prior to the engagement, plans for the action, routes for evacuation, number of ambulances available, and other preparations; (b) information relating to development in the military situation which required preparations on the part of the medical officers.

Prior to the engagement there was a conference of the medical officers of line troops, the commanding officers of ambulance and field hospital companies, and others concerned. A thorough reconnaissance was made of the terrain not then occupied by the enemy. Locations for ambulance stations were selected and plans made from study of maps for location of stations in the occupied area as soon as an advance was made. It is interesting to note that these plans were executed with practically no variation either as to location or as to time.

St. Mihiel operation, September 12-16.

From September 17-27 the division, minus the artillery, was stationed at Domevren-Haye, near Toul, for rest and training. The artillery remained in the St. Mihiel sector until after the signing of the armistice, and formed a part of the Second Army. On September 27-28 the division moved to Pagny-sur-Meuse, west of Toul, and there resumed training.

Meuse-Argonne operation, October 5 to November 11, 1918.

Army of Occupation.

The division was relieved, May 10, 1919, for return to this country, but its departure was delayed until July. Headquarters sailed from Brest July 13 and arrived at New York July 21.

DIVISION SURGEONS³

Col. Robert H. Pierson, M. C., December 3, 1917, to January 1, 1919.

Col. Carey J. Vaux, M. C., January 2, 1919, to June 4, 1919.

Lieut. Col. George C. Kieffer, M. C., June 5, 1919, to September 11, 1919.

THE 6TH DIVISION^{1, 8}

(Regular Army. Insignia: A six-pointed red star)

The 6th Division was organized at Camp McClellan, Ala., in November, 1917, from units of the Regular Army. These being at peace strength, the shortages were made up by assignment of National Army men. Especially was this true of the 318th Engineers, which was composed almost exclusively of the latter. The following organizations composed the division:

11th Infantry Brigade:

51st and 52d Infantry; 17th Machine Gun Battalion.

12th Infantry Brigade:

53d and 54th Infantry; 18th Machine Gun Battalion. 16th Machine Gun Battalion.

6th Field Artillery Brigade:

3d and 78th (light), 11th (heavy), Field Artillery; 6th Trench Mortar Battery.

318th Engineers:

6th Field Signal Battalion.

Trains (6th Sanitary Train; Field Hospitals Nos. 20, 37, 38, 40, and Ambulance Companies Nos. 20, 37, 38, 40).

The first unit of the division arrived in France July 10; the last July 26, 1918. Many units landed first in England and Scotland and then crossed the Channel. While at Le Havre the artillery came under fire from an enemy airplane and suffered the first casualties inflicted upon the division.

After training in the vicinity of Chateaufvillain, the division, minus the artillery, departed August 27 for Gerardmer, in the Vosges, which sector it occupied, under French command, until relieved October 11. During this period the sector was quiet, although enlivened with frequent raids and patrol combats. The divisional artillery at this time was in training at Valdahon.

The sanitary train arrived in France July 22, 1918, and was sent to the training area of the division. Training was immediately taken up under a training schedule issued by General Headquarters. Instruction was very intensive, but was carried out under considerable difficulties due to lack of manuals and necessary equipment. Units were scattered over a wide area, and it was very difficult to collect the personnel of the various units, excepting that in the sanitary train, for collective instruction. The sanitary train had no transportation. It received four-mule ambulances shortly prior to departure from this area, but these could not be taken along owing to lack of animals. Evacuation service was performed by Camp Hospital No. 9, and the divisional specialists were also assigned to this hospital for duty. While in this training area the health of the command was exceptionally good, with the exception of the occurrence of diarrhea.

When the division moved to the Gerardmer sector, August 17, the sanitary train functioned for the first time, taking over the hospitals from the 35th Division; sites of two of these were changed almost immediately after arrival. These hospitals were located as follows: Field Hospital No. 20 was at Gerardmer, functioning as a surgical and a general medical hospital, the surgical portion being in Hotel de Lac in conjunction with a French hospital, and the general medical in Maternelle Hospital. Field Hospital No. 37 was located at Storkensohn, working in connection with a French hospital. This hospital was in Bessonneau tents, and functioned as a surgical hospital for the southern

portion of the sector. Field Hospital No. 38 was located in Kruth, in buildings formerly occupied by a French hospital, the buildings having been turned over to it by a factory. This hospital functioned as a general medical and gas hospital. Field Hospital No. 40 was located at the same place in temporary wooden buildings and functioned as a skin, contagious disease, and venereal hospital. These hospitals acted as evacuation hospitals also, there being no evacuation hospital in the area. Evacuations were made to Base Hospital No. 23, at Vittel, about 61 km. (36.6 miles) distant.

A surgical team was assigned to the division, September 11, 1918, and functioned with Field Hospital No. 37, at Storkensohn. X-ray outfits of the French were used at both surgical hospitals. The mobile laboratory was assigned to work with Field Hospital No. 38, and the divisional specialists were attached to the sanitary train and visited all the division hospitals.

Evacuations in a sector of this character were carried on under many difficulties. All forms of transport were used over the mountainous terrain, and included Sunbeam motorcycles, with side litters, mule litters, mule ambulances, G. M. C. ambulances, and Ford ambulances. Hand carry was in some places long and tedious, and in several localities as many as three or four relays had to be provided, necessitating sometimes 16 men to transport one wounded man before he could be placed on mechanical transport. As the division had no ambulances regularly assigned to it, these were provided by attaching United States Army Ambulance Service Section No. 524 and Ambulance Company No. 162, giving a total of 32 ambulances. These ambulances were distributed pursuant to a scheme of distribution made by the director of ambulance companies. There was considerable difficulty in the use of ambulances in this particular type of terrain, owing to the burning out of brake linings of both the Ford and the G. M. C.

The supply service, though also working under difficulties owing to lack of transportation, was, nevertheless, very efficient, medical department supplies being distributed through the dressing stations to the front-line organizations. The medical supply depot was located at Gerardmer, with a branch depot at Kruth. The American Red Cross rendered very valuable services, procuring and distributing their own supplies. They established five advance comfort stations where they supplied hot chocolate and doughnuts to the troops on the march. The American Red Cross supply depot was located at the railhead at Cornimont.

The Meuse-Argonne operation being under way, the division, on October 27, was sent north to take its place in the line. Detraining near St. Menehould, south of the Argonne, a long and trying march due north was begun. Lack of transportation facilities forced the troops to drag their machine guns and other equipment by hand through the forest and over roads which a retreating enemy had used every means at his command to make impassable. After a march of approximately 50 km. (31 miles), divisional headquarters was established, November 6, at Stonne. At this time the division was a unit of the First Corps and in reserve.

On November 6, the left of the First Corps rested in the vicinity of Stonne. They began the turning movement eastward to the Meuse. As the left flank of the corps swung to the northeast, liaison with the French on the left was temporarily lost. Into this gap units of the 6th Division were hurried, and what promised to be a dangerous situation was thus saved.

The enemy at this time was in full retreat; and the necessity for its services no longer existing, the 5th Division was moved to the area northeast of Verdun. Before it could enter the line in this sector the signing of the armistice ended the fighting. The 11th Field Artillery went into action with the 89th Division during the Meuse-Argonne operation.

Forty days were spent by the division in quiet sectors and none in active ones. Twelve prisoners were captured and casualties totaling 576 were suffered. When the division arrived in the Meuse-Argonne region, the sanitary train took station near Froidos. Due to shortage of ambulances in the corps, United States Army Ambulance Service Section No. 524 was detached from the division, leaving it only 12 G. M. C. ambulances.

Eight were assigned to the division organizations which evacuated their own patients to evacuation hospitals in the vicinity. The sanitary train was without other transportation with the exception of six mule ambulances, without animals, and two motor trucks for its own supplies.

The sanitary train, while the division was in the Meuse-Argonne operation, was moved from its first camp, near Froidos, to the site of a former German hospital about 2 km. (1.2 miles) north of Apremont, where it was immobilized until the division was withdrawn. One field hospital function, taking care of a number of sick of the 6th Division and of sick from other divisions. One dressing station was established. This was at Stonne, the farthest point north reached by the 6th Division. Here a number of refugees and wounded from other divisions were cared for.

Division headquarters was established at Aignay-le-Duc, November 30, 1918. On April 12, 1918, movement of the division to Germany was begun. Division headquarters was at Bad Bertrich on April 30. On May 6 the movement of the division was stopped, about 60 per cent of the personnel having arrived in Germany. On May 20 movement to Brest was begun. Division headquarters embarked on June 3, 1919, and arrived at New York on June 10.

DIVISION SURGEONS *

Col. Paul L. Freeman, M. C., December 28, 1917, to May 12, 1919.

Col. James M. Phalen, M. C., May 13, 1919, to June 30, 1919.

Lieut. Col. Howard K. White, M. C., July 1, 1919, to August 31, 1919.

Lieut. Col. Fletcher O. McFarland, M. C., September 1-10, 1919.

THE 7TH DIVISION ^{1, 9}

(Regular Army. Insignia: Two black triangles with their apexes touching in center of a red circle)

The 7th Division was organized January 1, 1918, from troops of the Regular Army and by transfers from other units. For the purpose of training, organizations concentrated at Camp McArthur, Tex., in June, 1918, but the division was not completely assembled as a unit until arrival in France.

The organization was as follows:

135th Infantry Brigade:

55th and 56th Infantry; 20th Machine Gun Battalion.

14th Infantry Brigade:

34th and 64th Infantry; 21st Machine Gun Battalion.

7th Field Artillery Brigade:

79th and 80th (light), and 8th (heavy) Field Artillery; 7th Trench Mortar Battery.

19th Machine Gun Battalion.

5th Engineers.

10th Field Signal Battalion.

Trains (7th Sanitary Train: Field Hospitals Nos. 22, 34, 35, 36 and Ambulance Companies Nos. 22, 34, 35, 36).

The first unit of the division to go overseas arrived in France August 6, 1918; the last September 3, 1918.

For training purposes the division (less artillery) was sent to the fifteenth training area, with headquarters at Ancy-le-Franc (Yonne). For a similar purpose the artillery brigade was sent to Camp Meucon (Morbihan). It never joined the division during operations.

The division, less artillery, departed on September 27 for the front, detraining in the vicinity of Toul. It became reserve of the Fourth Corps, First Army. Headquarters was established successively at Gondreville, Villers-en-Haye, and Euvezin.

The sanitary train arrived at Brest, France, August 25, 1918, and four days later proceeded to the training area, arriving at Ancy-le-Franc September 1, 1918. The train arrived without any equipment, and as there were no hospital facilities in the area with the exception of a 10-bed French hospital, seriously sick were shipped by train to Base Hospital No. 17, at Dijon. Those unable to stand transportation were held at the overcrowded French hospital.

On September 20, 1918, Camp Hospital No. 49 opened at Laignes and relieved the situation. Field Hospital No. 22 assisted in the operation of this hospital while the division was in this area.

Puvenelle Sector, October 10 to November 11, 1918.

January 10, 1919, the division moved to the region north of Toul, with headquarters at Saizerais (Meurthe et Moselle), one regiment (34th Infantry) remaining in the devastated area for guard and police duty.

In April the division moved to the Colombey-les-Belles area, and then to the Le Mans Embarkation Center preparatory to returning to the United States.

Headquarters embarked on June 12, 1919, and arrived in New York on June 20, 1919.

DIVISION SURGEON³

Col. A. W. Williams, M. C., May 26, 1918 to November 8, 1919.

THE 26TH DIVISION^{1, 10}

(National Guard. Insignia: Dark-blue monogram YD on diamond-shaped field of olive drab)

The 26th Division was organized in August, 1917, at Boston, Mass., from National Guard troops of the New England States, supplemented by the small quota of National Army troops from Camp Devens, Mass.

The organization was as follows:

51st Infantry Brigade:

101st and 102d Infantry; 102d Machine Gun Battalion.

52d Infantry Brigade:

103d and 104th Infantry; 103d Machine Gun Battalion.

101st Machine Gun Battalion.

51st Field Artillery Brigade:

101st and 102d (light), 103d (heavy) Field Artillery; 101st Trench Mortar Battery.

101st Engineers.

101st Field Signal Battalion.

Trains (101st Sanitary Train: Field Hospitals Nos. 101, 102, 103, 104, and Ambulance Companies Nos. 101, 102, 103, 104).

The first unit to go overseas arrived at St. Nazaire, France, on September 20, 1917. The last element arrived on November 12, 1917.

The division (less artillery, engineers, and signal battalion) remained in a training area with headquarters at Neufchateau until February, 1918. For purposes of training, the artillery was sent to Coetquidan. It, as well as all other elements, rejoined the division early in February and remained with it during all activities in which it participated.

The division proceeded to the vicinity of Soissons on February 6, 1918, where attached to the French Eleventh Corps, its units went into line in the Chemin des Dames sector on February 10. It was withdrawn March 21, and moved to the La Reine and Boucq sector northwest of Toul, relieving the American 1st Division and the French 10th Colonial Division in line on April 3. From April 10-13 the division successfully repelled an attack by the enemy on the Bois Brule subsector at Apremont. This was the first engagement in which American troops took part in any number. On April 20-21 the

division was involved in a defensive operation known as the "Seicheprey raid." This was an enemy attack in force against the defenses of the town of Seicheprey. Although American losses were heavy, the enemy was repulsed, and all ground taken by him was recaptured by counterattack. Minor operations of both an offensive and a defensive character kept this sector active during the remainder of the division's stay therein.

The sanitary train arrived in France in September and October, 1917, and was sent to the Neufchateau training area. Here the sections of the sanitary train were located in widely separated towns, the ambulance section at Liffol-le-Grand and the field hospital section at Bazoilles-sur-Meuse.

Field Hospital No. 101 assisted in the construction of the hospital center at Bazoilles and Field Hospital No. 104 opened at Neufchateau for division sick. On December 7, 1917, Field Hospital No. 101 established a hospital at Liffol-le-Grand for the sick and Field Hospital No. 104 cared for contagious diseases only. Field Hospital No. 103 was sent to Dijon, where it assisted in the construction of Base Hospital No. 17. Field Hospital No. 102 was sent in detachments to the operating division hospitals and to line organizations. In the last week of January, 1918, preparations were made for a move, and the hospitals being operated by the field hospitals were turned over to Base Hospital No. 66, at Neufchateau. The field hospital personnel was assembled and reorganized. On arrival in the Chemin-des-Dames sector, the sanitary train was subdivided among French medical personnel. Though line troops received valuable training here, the medical Department had no opportunity to train satisfactorily its units by actual experience in their field duties, and the French cared for almost all casualties. It made observations, however, in gas treatment, in operation of the triage, and in other details of field service. As our troops had no base hospitals in this region, the French permitted us to transfer patients to the American Ambulance (later American Red Cross Hospital No. 1), at Paris.

The field hospitals functioned as follows: Field Hospital No. 101 went to Bois Roger; No. 102 to Ambulance St. Paul at Soissons for seriously wounded; No. 103 operated in a chateau at Muret et Crouettes; No. 104 assisted in a French evacuation hospital at Vasseny. Detachments were also sent to various other French hospitals, including contagious, gas, venereal, skin, and psychoneurotic hospitals.

When the division entered the lines in the Toul sector, dressing stations were operated at Gironville and Liouville, on the left, and at Mandres-aux-Quatre-Tours and Bois de Rehanne, on the right. Ambulance companies were reinforced by United States Army Ambulance Service Section No. 647. Because of the long frontage of the Toul sector—18 km. (10.8 miles)—two triages were established. That for the left of the line, operated by Field Hospital No. 104, was located successively at Aulnois-sous-Vertuzey and at Abbaye Ronzeval; while that on the right, operated by Field Hospital No. 102, was located first at Menil-la-Tour and later, after June 2, at a point near Minorville. Wounded and gassed from the left sector were evacuated to Mobile Hospital No. 39 near Aulnois-sous-Vertuzey, and from the right sector to Evacuation Hospital No. 1 at Sebastopol, while contagious, venereal, and skin cases were sent to Field Hospital No. 103, at Toul. Divisional sick and gassed who were fit for transportation were sent to Field Hospital No. 101, at Caserne-la-Marche, in Toul. Before the division left this sector this hospital had expanded to a capacity of 900 beds and was amply equipped.

Chateau-Thierry Sector, July 10-14.

Champagne-Marne operation, July 15-18.

Aisne-Marne operation, July 18 to August 3.

The division, on August 16, proceeded to the Chatillon training area. The 101st Engineers remained in line under the First Corps until August 3, and the artillery brigade until August 4 supporting the 4th and 42d Divisions.

The sanitary train also entrained for the 12th Rest Area, in the vicinity of Chatillon-sur-Seine, where field hospitals were located at Villotte for divisional sick, severe cases being sent to Base Hospital No. 15, at Chaumont. Mobile Surgical Unit No. 7, which now joined the division, was assigned to Field Hospital No. 3.

St. Mihiel operation, September 12-16.

On September 26, Field Hospital No. 102 was moved to Ambly, and on the 28th all field hospitals except No. 102 were set up at Chapelle and Ferme de les Palameix. This disposition of field hospitals continued until the division left this sector. When the division attacked, on September 26, 1918, Ambulance Company No. 101 followed the infantry and established a dressing station at Saulx, with litter bearers working well in advance. Ambulance Company No. 102 evacuated the wounded, running into Saulx and beyond, making connection with the litter-bearer section. That night the field was cleared of wounded and the dressing station was moved back to Hannonville.

Meuse-Argonne operation.

On November 14, 1918, the division proceeded to the 8th Training Area, with headquarters at Montigny-le-Roi. In January it moved to the Le Mans embarkation center, where it remained until its return to the United States.

Division headquarters sailed from Brest on March 27, 1919, and arrived at Boston April 4, 1919.

DIVISION SURGEONS³

Col. James L. Bevans, M. C., August 22, 1917, to June 24, 1918.

Col. Ralph S. Porter, M. C., June 25 to November 23, 1918.

Maj. Fred. E. Jones, M. C., November 27 to December 9, 1918.

Lieut. Col. Thomas L. Jenkins, M. C., December 10, 1918, to February 4, 1919.

Col. John H. Allen, M. C., February 5 to April 29, 1919.

THE 27TH DIVISION^{1, 11}

(National Guard. Insignia: A red-bordered black circle with the letters NYD in monogram and surrounded by seven stars placed as in the constellation of Orion)

The 27th Division was organized in September, 1917, at Camp Wadsworth, S. C., from National Guard troops of New York.

The organization was as follows:

53d Infantry Brigade:

105th and 106th Infantry; 105th Machine Gun Battalion.

54th Infantry Brigade:

107th and 108th Infantry; 106th Machine Gun Battalion.

52d Artillery Brigade:

104th and 105th (light), 106th (heavy) Field Artillery; 102d Trench Mortar Battery.

104th Machine Gun Battalion.

102d Engineers.

102d Field Signal Battalion.

Trains (102d Sanitary Train: Field Hospitals Nos. 105, 106, 107, 108, and Ambulance Companies Nos. 105, 106, 107, 108).

The first unit of the division arrived in France May 7, 1918; the last, July 12, 1918.

For training purposes, the division (less artillery) was attached to British units in the Department of the Somme until July 3, 1918. For the same purpose the Artillery brigade went to Camp de Souge, where it remained until August 30, 1918. It never served again with the 27th Division, but participated in the Meuse-Argonne operation, September 26 to November 11, 1918.

The sanitary train did not rejoin the division until the latter part of July and August. While in the training area all casualties were cared for by British field ambulances and casualty clearing station.

Dickenbush Lake and Scharpenberg sectors, July 9 to August 30, 1918.

Ypres-Lys operation, August 31 to September 2, 1918.

Somme operation, September 24 to October 20, 1918.

The division was withdrawn from line October 21, and proceeded to the Corbie area, with headquarters at Corbie. On November 23 it moved to the Le Mans embarkation center preparatory to its return to the United States.

Division headquarters sailed from Breast on February 26, and arrived at New York on March 6, 1919.

DIVISION SURGEONS ³

Lieut. Col. Edward R. Maloney, M. C., July 16, 1917, to August 22, 1918.

Col. Walter C. Montgomery, M. C., August 23, 1918, to February 26, 1919.

THE 28TH DIVISION ^{1, 12}

(National Guard. Insignia: Red keystone)

The 28th Division was organized in September, 1917, at Camp Hancock, Ga., from National Guard troops of the State of Pennsylvania.

The organization was as follows:

55th Infantry Brigade:

109th and 110th Infantry; 108th Machine Gun Battalion.

56th Infantry Brigade:

111th and 112th Infantry; 109th Machine Gun Battalion.

107th Machine Gun Battalion.

53d Field Artillery Brigade:

107th and 109th (light); 108th (heavy) Field Artillery. 103d Trench Mortar Battery.

103d Engineers.

103d Field Signal Battalion.

Trains (103d Sanitary Train; Field Hospitals Nos. 109, 110, 111, 112 and Ambulance Companies Nos. 109, 110, 111, 112).

The first unit of the division to go overseas arrived in France May 14, 1918; the last, June 11, 1918.

For training purposes, the division (less artillery) was attached to the British 34th Division, south of St.-Omer, where it remained until June 9. The division proceeded to the vicinity of Paris June 13, where it was attached to French troops for further training. For the same purpose the Artillery brigade went to Camp Meucon. It rejoined the division in August, 1918, and remained with it until October, 1918, when it passed to the reserve of the First Army Artillery. It later participated with the 91st Division in the Ypres-Lys operation, October 29 to November 11, 1918.

The sanitary train arrived at Liverpool, England, on May 31, 1918, and was sent to Fays-Billot, in the vicinity of Langres, France, for training. Here it remained until July 6, 1918, when it rejoined the division in the vicinity of Chateau-Thierry.

Chateau-Thierry Sector, July 7-14, 1918.

Champagne-Marne operation, July 15-18, 1918.

Aisne-Marne operation, July 18 to August 6, 1918.

Fismes sector, August 7-17, 1918.

Oise-Aisne operation, August 18 to September 7, 1918.

Meuse-Argonne operation, September 26 to October 10, 1918.

Upon its relief from the Meuse-Argonne operation the division proceeded to the Thiaucourt sector, Toul, which it held from October 16 to November 11, 1918.

Field Hospital No. 109 operated at Bouillonville, but the number of patients admitted was very small. On October 30 it moved to Nonsard, where it opened a triage in a large barn, operating here until the armistice.

Field Hospital No. 110 on October 17 took over the tentage of Field Hospital No. 146 of the 37th Division at Bernecourt. Here it functioned for two days, moving to Essey-et-Maizerais, where it erected and operated a tent hospital until the armistice.

Field Hospital No. 111 established in a French hospital near Minerville on October 18, and on the 23d moved to Bernecourt. On the 30th it moved to Buxerulles.

Field Hospital No. 112 established at Essey-et-Maizerais on October 18, but as the work was very light it closed on November 1, 1918.

After the armistice the division remained in the Thiaucourt sector until January 9, 1919, when it moved south of Toul, with headquarters at Colombey-les-Belles, remaining there until the latter part of March, when it moved to the Le Mans embarkation center preparatory to returning to the United States.

Division headquarters sailed from St. Nazaire April 20, 1919, and arrived at Newport News May 1, 1919.

DIVISION SURGEON³

Col. William J. Crookston, M. C., May 22, 1917, to April 18, 1919.

THE 29TH DIVISION^{1, 13}

(National Guard. Insignia: A circle bisected by two half circles, reversed and joined; one-half of circle blue, other half gray)

The 29th Division was organized at Camp McClellan, Ala., under authority of a War Department order dated July 26, 1917. It was originally composed of National Guard units from the District of Columbia and the States of New Jersey, Delaware, Maryland, and Virginia. Later, however, the Delaware troops were withdrawn and organized into pioneer infantry units.

The following organizations composed the division:

57th Infantry Brigade:

113th, 114th Infantry; 111th Machine Gun Battalion.

58th Infantry Brigade:

115th, 116th Infantry; 112th Machine Gun Battalion.

54th Field Artillery Brigade:

110th, 111th (light), and 112th (heavy) Field Artillery; 110th Trench Mortar Battery.

110th Machine Gun Battalion.

104th Engineers.

104th Field Signal Battalion.

Trains (104th Sanitary Train Field Hospitals Nos. 113, 114, 115, 116, and Ambulance Companies Nos. 113, 114, 115, 116).

The first element of the division arrived in France June 8, 1918, and the last, July 22, 1918. Many of the units landed in England and then crossed the Channel.

Within a few days after its arrival in France the division proceeded to the 10th Training Area and established headquarters at Prauthoy (Haute Marne). After two weeks' training, orders were received to move to upper Alsace for the purpose of taking over a quiet sector of the front. From the 17th to 25th of July the division was stationed near Belfort under command of the French Fortieth Corps.

Occupation of the center sector, upper Alsace, began on the 25th of July and was completed on August 7, at which time command of the sector passed from the French to the Americans.

On September 23 the division was withdrawn to the vicinity of Belfort and ordered to the Robert Espagne training area. After leaving Belfort the division was assigned to the American First Army and ordered to the area in which the Meuse-Argonne operation was soon to be launched. Division headquarters was established at Conde, September 24. From this point the division moved north, with headquarters successively at St. Andre and Blercourt. On October 1 the division was placed in reserve of the French Seventeenth Corps, with headquarters at the citadel of Verdun.

The sanitary train did not join the division while in the training area, and all sick were cared for by Camp Hospital No. 10. The train rejoined the division in the center

sector on July 25, 1918, and functioned as follows: Field Hospital No. 113 at Romagny, for gassed cases, most of its equipment being furnished by the French; Field Hospital No. 114 at Reppe; Field Hospital No. 115 at Montreux Jeune, for medical, contagious, and venereal cases. This unit operated a small infirmary at Retzwiller for the treatment of skin cases and emergency gas. Field Hospital No. 116 was stationed at Chevannes-les-Grandes, for surgical cases. The medical supply dump was at Fontaine.

From the field hospitals, cases that required evacuation were sent to French hospitals, there being no American evacuation or base hospitals in the sector.

Ambulance Companies No. 113 and No. 114 took station at Traubach-la-Haute, where the former established a dressing station. While in this sector, the sanitary troops received their most important training. Each field hospital received and treated patients. Two medical officers and three enlisted men were sent from each field hospital to French hospitals for a course of instruction in the French methods of handling wounded. Details were also sent to the schools for gas defense at Chaumont and Langres, and to the motor transport school.

Meuse-Argonne operation, September 26 to November 11, 1918.

After the signing of the armistice the division was removed to a rest area, with division headquarters at Bourbonne-les-Bains. The movement to the embarkation center for return to this country began April 11, and on the 14th, headquarters was established at Ballon, near Le Mans. Division headquarters sailed May 6 and arrived at Newport News May 19.

DIVISION SURGEONS ³

Col. Craig R. Snyder, M. C., August 24, 1917, to January 30, 1918.

Col. John B. Huggins, M. C., January 31, 1918, to October 19, 1918.

Col. Arthur M. Allen, M. C., November 18, 1918, to December 28, 1918.

Col. John B. Huggins, M. C., December 29, 1918, to May 31, 1919.

THE 30TH DIVISION ^{1, 4}

(National Guard. Insignia: Monogram "OH" containing Roman numeral XXX, all in blue on maroon field)

The 30th Division was organized in October, 1917 at Camp Sevier, S. C., from National Guard troops of Tennessee and North and South Carolina.

The organization was as follows: ²

59th Infantry Brigade:

117th and 118th Infantry; 114th Machine Gun Battalion.

60th Infantry Brigade:

119th and 120th Infantry; 115th Machine Gun Battalion, 113th Machine Gun Battalion.

55th Artillery Brigade:

113th, 114th (light), 115th (heavy) Field Artillery; 105th Trench Mortar Battery.

105th Engineers.

105th Field Signal Battalion.

Trains (105th Sanitary Train: Field Hospitals Nos. 117, 118, 119, 120 and Ambulance Companies Nos. 117, 118, 119, 120).

The first unit of the division to go overseas arrived in France May 14, 1918; the last, June 24, 1918.

For training purposes, the division (less artillery) was attached to British units in the Eperlecques area (Pas-de-Calais), where it remained until July 4, 1918. For the same purpose the artillery brigade went to Coetquidan. It never served again with the 30th Division, but participated in the St. Mihiel operation, September 12 to 16, 1918, and in the Meuse-Argonne operation, September 26 to October 8, 1918. It was also in line

in the Toul sector August 23 to September 11, 1918, and in the Woevre sector October 11 to November 8, 1918.²

The 105th Sanitary Train upon arrival in France was detached from the division and did not rejoin it again until August 1, 1918, when Field Hospitals No. 118 and No. 119 and Ambulance Companies No. 118 and No. 119 reported. The remainder of the sanitary train did not join until after the armistice. While in the training area casualties were evacuated and cared for by British medical organizations.

Canal Sector, Belgium, July 16 to August 30, 1918.

Ypres-Lys operation, Belgium, August 31 to September 2, 1918.

Somme operation, September 24 to October 20, 1918.

The division was withdrawn October 20 and proceeded to the vicinity of Amiens, where it remained until November 24, when it was ordered to the Le Mans embarkation center preparatory to return to the United States.

Division headquarters sailed from St. Nazaire March 18, 1919, and arrived at Charleston, S. C., on April 2, 1919.

DIVISION SURGEONS

Col. Arthur M. Whaley, M. C., August 25, 1917, to November 25, 1918.

Maj. Philip Norris, M. C., November 26, 1918, to December 9, 1918.

Maj. Henry Norris, M. C., December 10, 1918, to February 15, 1919.

Lieut. Col. Jerome L. Morgan, M. C., February 22, 1919, to April 15, 1919.

THE 32D DIVISION^{1, 15}

(National Guard. Insignia: A red arrow piercing a line)

The 32d Division was organized at Camp McArthur, Tex., under authority of a War Department order dated July 18, 1917. It was composed of National Guard troops from the States of Michigan and Wisconsin.

The following organizations composed the division:

63d Infantry Brigade:

125th and 126th Infantry; 120th Machine Gun Battalion.

64th Infantry Brigade:

127th and 128th Infantry; 121st Machine Gun Battalion.

57th Field Artillery Brigade:

119th, 120th (light), 121st (heavy) Field Artillery; 107th Trench Mortar Battery.

119th Machine Gun Battalion.

107th Engineers.

107th Field Signal Battalion.

Trains (107th Sanitary Train: Field Hospitals Nos. 125, 126, 127, 128, and Ambulance Companies Nos. 125, 126, 127, 128).

The 147th Field Artillery of the 41st Division was attached to the 57th Field Artillery Brigade and served with it throughout its activities.

The first unit of the division arrived in France February 6, 1918, and the last, March 14, 1918. The first casualties were suffered when the transport *Tuscania*, carrying the 107th Sanitary Train, was torpedoed and sunk February 5, 15 men of this organization being lost.

Division headquarters was established at Prauthoy, Haute Marne, on February 24. The 32d Division was originally designated as a replacement division and as such sent many of its members to other organizations. However, the German offensive of March 21 and the resulting necessity for additional American troops forced a change in these plans. Replacements were furnished it, and the division assembled in the 10th Training Area preparatory to taking the field as a combat unit. After four weeks spent in this area, the division was ordered to the quiet Haute-Alsace Sector. The movement to this sector

began May 15, and on the 16th, headquarters was established at La Chapelle. On the 18th, the French troops in the sector were relieved and the division for the first time took over front-line trenches, which were held until July 21.

The sanitary train arrived in France in the latter part of February and early part of March, 1918, and joined the division in the 10th Training Area. Casualties were cared for by Camp Hospital No. 10, which was operated by Field Hospital No. 127, assisted by details from other field hospitals. All serious cases were evacuated to Base Hospital No. 17, Dijon. On its arrival in the Haute-Alsace sector, the sanitary train was very intimately associated with the medical service of the French Army. Each field hospital was sent to operate in connection with a French ambulance. Field Hospital No. 125 went to Valdieu, and on June 27 opened a hospital at Chavannes-les-Grands. Field Hospital No. 126 operated with a French ambulance at Romagny, but after July 1, functioned alone for the care of gassed and sick.

Field Hospital No. 127 was sent to Lauw, Alsace, where it operated a hospital in conjunction with a French ambulance. On June 26, a part of this unit opened a hospital at Masseveaux, Alsace.

Field Hospital No. 128 operated a hospital with a French ambulance at Bellemagny, Alsace, to June 11, and from June 26 assisted in a French evacuation hospital at La Chapelle. There being no American evacuation hospitals in the sector all evacuations from the division were made through French evacuation hospitals.

Aisne-Marne operation, July 30 to August 6, 1918.

Oise-Aisne operation, August 28 to September 2, 1918.

Meuse-Argonne operation, September 26 to November 11, 1918.

Army of Occupation.

Division headquarters sailed from Brest, April 27, 1919, and arrived at New York, May 5.

DIVISION SURGEONS ³

Col. Perry L. Boyer, M. C., August 25, 1917, to November 4, 1917.

Col. Gilbert R. Seaman, M. C., November 5-21, 1917.

Col. Paul C. Hutton, M. C., November 22, 1917, to March 10, 1918.

Col. Gilbert R. Seaman, M. C., March 11, 1917, to October 21, 1918.

Lieut. Col. James R. Scott, M. C., October 22, 1918, to January 27, 1919.

Major Louis A. Moore, M. C., February 1, 1919, to March 15, 1919.

Lieut. Col. James R. Scott, M. C., March 16, 1919, to May, 1919.

THE 33D DIVISION ^{1, 13}

(National Guard. Insignia: A yellow cross on a black circle)

The 33d Division was organized at Camp Logan, Tex., in July, 1917, from National Guard troops of Illinois. The organization was as follows:

65th Infantry Brigade:

129th and 130th Infantry; 123d Machine Gun Battalion.

66th Infantry Brigade:

131st and 132d Infantry; 124th Machine Gun Battalion.

58th Field Artillery Brigade:

122d, 124th (light), and 123d (heavy) Field Artillery; 108th Trench Mortar Battery.

122d Machine Gun Battalion.

108th Engineers.

108th Field Signal Battalion.

Trains (108th Sanitary Train: Field Hospitals Nos. 129, 130, 131, 132 and Ambulance Companies, Nos. 129, 130, 131, 132).

The first unit of the division arrived in France May 18, 1918; the last, June 15, 1918.

For the purpose of training, the division (less artillery) was sent to the Huppy area near Abbeville, where it began instruction with the British. On June 8, it moved to the Eu area, and on June 20-21 advanced into the Amiens sector, where certain units participated in several active operations. On July 4, two companies of the 131st Infantry and two companies of the 132d Infantry took part in the attack of the Australians on Hamel. In the Somme offensive, the 131st Infantry played a prominent part in the attack on Chipilly Ridge and Gressaire Wood.

On August 23, the division was transferred to the area of the First American Army in the Toul sector and was concentrated in the vicinity of Tronville-en-Barrois. On September 5, it began its movement to the Verdun sector, where it relieved the French 120th Division and the right regiment of the French 57th Division on the nights of September 7, 8, and 9.

The sanitary train arrived in France June 20, 1918. One-half of the train (Field Hospitals No. 129 and No. 130 and Ambulance Companies No. 129 and No. 130 and four camp infirmaries) proceeded to Molliens-aux-Bois for training under the British, while Field Hospitals No. 131 and No. 132, and Ambulance Companies No. 131 and No. 132 were sent to a training area in southern France.

In order that the Medical Department of the division might employ British equipment, it was necessary so to organize the sanitary train that its elements would function in a manner similar to those of corresponding units in the British Army—the field ambulances. This was effected by combining two ambulance companies and two field hospitals. One ambulance company and one field hospital then constituted a provisional field ambulance. The two units thus formed were numbered 129 and 130, and both were equipped with British medical matériel.

Provisional Field Ambulance No. 129 went into training at Famechon, operating in conjunction with Field Ambulance No. 42 (British). On July 18 it moved to Allonville, with the 65th Brigade, where it was attached to the Australian Third Corps, and performed evacuation service from forward areas.

Provisional Field Ambulance No. 130 went into training at Pierregot, performing regular ambulance service for the 66th Brigade while in the British sector and also serving British troops located near it. Detachments were sent forward frequently to the main dressing stations, advance dressing stations, and bearer posts for the purpose of instruction. Provisional Ambulance Company No. 130 operated with the 66th Brigade and the British in front of Vadencourt, Henencourt, and Montigny. In the attack on Chipilly Ridge and Gressaire Wood, eight casualties occurred in the Medical Department detachment of the 131st Infantry.

When the sanitary train arrived in the Toul sector British equipment was retained with the exception of the transport, which was returned to the British. Field Hospitals No. 131 and No. 132 rejoined the division on August 31, but the remaining two ambulance companies (No. 131 and No. 132) did not join until October, and United States Army Ambulance Service Section No. 600 was assigned to the division to replace them.

The sanitary train was located at Menil-sur-Saulx and Field Hospital No. 129 established a sick collecting point at Tronville. When the division moved to the Verdun sector, the sanitary train was disposed as follows: Field Hospital No. 131, at Glorieux, triage; Field Hospital No. 130, gas cases, at Souhesmes; Ambulance Company No. 129 established an advanced dressing station at La Claire. The remainder of the sanitary train took station at Sivry-la-Perche, where Field Hospital No. 132 opened a divisional sick collecting station.

From the field hospitals casualties were evacuated to Evacuation Hospitals No. 6 and No. 7, at Souilly.

On September 16 the sanitary train moved to Thierville and Glorieux and preparations were made for the coming operation.

Meuse-Argonne operation, September 26 to October 23

Troyon sector, October 26 to November 11, 1918.

On December 8, 1918 the division commenced an advance which carried its leading brigades across the Moselle into Rhenish Germany. During this movement it was attached to the army of occupation, but upon the revocation of this disposition, on December 15, it was withdrawn west of that river and established in the northern part of Luxemburg, with headquarters located at Diekirch. There it remained until the latter part of April, 1919, when the movement to Le Mans was begun preparatory to returning to the United States. Division headquarters sailed from Brest on May 9, and arrived at Hoboken on May 17, 1919.

DIVISION SURGEONS³

Col. L. M. Hathaway, M. C., August 23, 1917, to January 6, 1919.

Col. Harry D. Orr, M. C., January 7, 1919, to May 18, 1919.

THE 35TH DIVISION^{1, 17}

(National Guard. Insignia: Santa Fe cross within two circles of varying colors, the outer one divided into four arcs)

The 35th Division was organized at Camp Doniphan, Fort Sill, Okla., in September, 1917, from National Guard units of Missouri and Kansas.

The organization was as follows:

69th Infantry Brigade:

137th and 138th Infantry; 129th Machine Gun Battalion.

70th Infantry Brigade:

139th and 140th Infantry; 130th Machine Gun Battalion.

60th Field Artillery Brigade:

128th, 129th (light), 130th (heavy) Field Artillery; 110th Trench Mortar Battery.

128th Machine Gun Battalion.

110th Engineers.

110th Field Signal Battalion.

Trains (110th Sanitary Train: Field Hospitals Nos. 137, 138, 139, 140 and Ambulance Companies Nos. 137, 138, 139, 140).

The first unit of the division arrived in France May 11, 1918; the last, June 8, 1918.

For training purposes, the division (less artillery) was sent to the vicinity of Eu (Somme), where it remained until June 8, 1918. It moved to the vicinity of Epinal on June 11, and on June 30 it moved to the Vosges, where it was brigaded with the French in line in the Gerardmer sector. Command of the sector passed to the commanding general, 35th Division, on July 27. The Artillery brigade trained at Camp Coetquidan. It rejoined the division in the Vosges, August 14.

On August 31, the division was relieved by units of the American 6th Division, and French 131st Division, and proceeded to the Foret de Haye, west of Nancy, for concentration preparatory to the St. Mihiel operation, in which it was in the reserve of the First Army.

On September 15, the division was placed under the tactical control of the French Second Army, and moved to the Naives-devant-Bar area, with headquarters established at Passavant-en-Argonne, on September 18. On September 19, it moved to the Vraincourt—Auzeville area, with headquarters at Autrecourt. On September 23, it relieved the French 73d Division, in the line in the Grange-la-Comte sector.

The sanitary train did not join the division until June 12. Practically no medical equipment had been brought from the United States except the personal equipment of officers and enlisted men. Battalions were supplied with British equipment and three British field ambulances. Nos. 96, 97, and 98, were assigned to the division as training units as well as to care for division casualties. When the division arrived in the vicinity of Epinal, the sanitary train rejoined it and was billeted at Eloyes. The train arrived with but little equipment, and no transportation was available for the first 36 hours.

Ten large 3-ton trucks were assigned to the train, eight of which were used to collect and evacuate the sick and injured. Within a week after its arrival in this sector, 42 trucks and 12 motor ambulances were received.

Field Hospital No. 137 established in tents and buildings at Eloyes for sick and contagious cases.

Field Hospital No. 140 and Ambulance Company No. 140 were stationed at La Racine for the hospitalization and evacuation of the 69th Brigade and 110th Engineers. Field Hospital No. 136 and Ambulance Company No. 136 were at Le Menil, to cover the 70th Brigade and Machine Gun Battalion.

Field Hospital No. 139 and Ambulance Company No. 139 were held in reserve. Ambulance Company No. 137, with headquarters at Eloyes, operated as an evacuation ambulance company.

When the division began to filter in with French troops in the Vosges, Field Hospital No. 139 took over a section of a French hospital at Bussang and Ambulance Company No. 140 established in part at Ranspach. On June 20, United States Army Ambulance Section No. 606 reported for duty with the sanitary train and was assigned to Ranspach for evacuation from battalions in the line to the field hospital at Bussang.

On June 28 Field Hospital No. 138 relieved No. 139 at Bussang, the latter moving to Kruth, where it operated a hospital for contagious diseases. A section of Field Hospital No. 137 established a hospital for surgical and gas cases at Storkensohn. Field Hospital No. 140 operated at Urbes for medical and venereal cases. The medical supply depot was also at the latter place. A section of Field Hospital No. 137 remained at Eloyes to care for seriously sick at that point.

Ambulance Company No. 138 moved up to Bussang, and the remainder of the ambulance companies established their headquarters at Ranspach.

Motor ambulance stations were established at Larchey, Dreh, Kruth, Haag, Wagram, and Moosch. Ambulance Company No. 140 operated its animal-drawn ambulances from Thann and Mittlach. The dressing sections of Ambulance Companies No. 139 and No. 140 were operating in connection with Alpine ambulances at Larchey and Wagram. Dressing station sections were also operating at Haag and Wagram. On July 1 the section of Field Hospital No. 137, operating at Eloyes, was closed and consolidated at Storkensohn. Sections from Ambulance Companies Nos. 137, 139, and 140 also occupied parts of the Alpine ambulances at Mittlach, Larchey, and Nonette. These three principal dressing stations served the front line and were the farthest points to which ambulances could be sent. From the battalion aid stations to these dressing stations it was necessary to transport the patients by hand, pack mule, or wheeled litter.

The Alpine ambulances were permanent sector installations, with a small personnel from the French medical department. They were absolutely shell-proof and were practically entirely underground; each was equipped for the treatment of the gassed and had its wards, operating rooms, etc., as well as quarters for the personnel.

On July 20 the dressing station at Nonette was given up. Ambulance Company No. 137 established a dressing station at Ventron. At this time Ambulance Company No. 139 operated the station at Mittlach and Ambulance Company No. 138 at Larchey. The transport section of the latter operated as an evacuation ambulance company.

United States Army Ambulance Service Section No. 606 was relieved from duty with the division and a part of section No. 642 was assigned.

On August 10 units of the sanitary train were located as follows: Field Hospital No. 137, operating in three sections, at Storkensohn, with Surgical Unit No. 13, for surgical cases, at Kruth for surgical and gassed cases, and at Dreh for gas and nontransportable wounded.

Field Hospital No. 138, at Bussang, functioned as an evacuation hospital; No. 139, at Le Menil, for contagious; No. 140, at Ventron, for medical, venereal, and skin cases. Ambulance Company No. 137 operated dressing stations at Larchey and performed evacuation in that sector. Ambulance Company No. 138, at Bussang, evacuated to base hospitals. Ambulance Company No. 139, at Ventron, evacuated the reserve area. Ambulance Company No. 140 operated a dressing station at Mittlach, evacuating that sector.

The problem of evacuation of the wounded from the front in the mountains back to the field hospitals presented at all times almost every imaginable difficulty. The character of the terrain rendered any plan of uniform evacuation impossible. On account of the difference in the lateral elevation of most of the trenches, it was necessary for each of the battalions to establish from two to four aid stations, and, in addition, there were always one or two Medical Department men operating a small aid station with each company in line.

From the front-line trenches it was always necessary to carry the wounded back by hand; in most instances not even a litter could be used, the men being transported on the backs of the litter bearers. Litter bearers ordinarily worked in squads of four, the litter being carried on the shoulders of the four men. Occasionally it was possible to use a wheel litter, where the paths were not too rough and not too steep.

From battalion aid stations to the dressing station it was occasionally possible to send up narrow double-decked French litter ambulances carrying two patients recumbent. This ambulance, however, was unsatisfactory because of its weight and unwieldiness, and also because on the steep paths it always required two mules. The pack carrier, or cacolet, was tried out, but was soon abandoned because of the pain that transportation by it gave the wounded man. In spite of all the difficulties and the long distances, no patient was ever received at the surgical hospital later than 12 hours after his injury.

When, on August 31, the division was relieved in the Gerardmer sector, the relief of the Medical Department was carried out in conformity with the following orders:

D. S. 35TH DIVISION,
August 31st, 1918.

Secret.

FIELD MEDICAL ORDER No. 8

1. In compliance with orders, headquarters, 35th Division and 33d French Corps, the sanitary units of the 6th Division will relieve the sanitary units of the 35th Division. This relief will be completed before midnight of September 1, 1918. The relief will be made, unit for unit, in the present location of the sanitary units of the 35th Division.

2. The commanding officer, 110th Sanitary Train, will continue to clear the field hospitals of the 35th Division into the Base at *Vittel*, with all available transportation, until midnight September 1, 1918.

3. As soon as the relief of units of the 35th Division is complete, each unit will move to its new billeting area. The billeting areas designated for the sanitary train, September 2, 1918, are *Barrey Seroux* and *Arrents de Carcieux*. Unit billeting officers should be sent 24 hours ahead of the movement of their unit. The relief and movement of the units of the sanitary train of the 35th Division must be completed before 6 p. m., September 2, 1918.

4. The commanding officer, 110th Sanitary Train, will arrange to cover movement of troops with ambulances and to collect sick and injured from the new billeting areas. Evacuation to be made to the hospitals at *Gerardmer* or to the French Ambulance at *Fraize*.

5. The surgical team, less the three female nurses and the X-ray unit with personnel, will accompany Field Hospital No. 137. The three female nurses will be sent to *Vittel*, to remain there until the division arrives in its new area.

6. Intransportable cases of sick and injured will be taken over by the field hospitals of the 6th Division.

7. Every field hospital, ambulance company, and regimental or battalion unit will be completely equipped with medical supplies. Shell dressings on the basis of 700 to each field hospital will be taken. Each field hospital will take its allotment of ward tents and other necessary tentage.

8. The medical supply depot will cut its supplies down to two truck loads after supplying the units of the 35th Division. All surplus supplies from hospitals, ambulance companies, and medical supply depot will be turned over to the 6th Division. Red Cross and French beds, together with all French equipment and all surplus American equipment now held in the 35th Division, will be turned over to the corresponding units of the 6th Division on informal receipt.

9. The bath at *Kruth*, with one Foden lorry, will be left with the 6th Division as sector equipment. One Foden lorry will accompany the division.

10. In compliance with telegraphic orders, 7th American Army Corps, Ambulance Company No. 162 will report for duty to the 6th Division as soon as the 35th Division moves.

HDQRS., MACKTARY.

August 31, 1918.

Secret

Field Orders, No. 60.

1. In accordance with secret orders, hdqrs. 35th Division, the sanitary train of the 6th Division will relieve the units of this command. Relief will be effected before midnight, September 1, 1918. The relief will be made unit for unit in the present locations of units of this train.

(a) In order to avoid unnecessary transportation, units will, when possible, make an exchange of equipment.

(b) Red Cross beds and mattresses, French equipment, and all surplus American equipment will be turned over to the units of the 6th Sanitary Train, on informal memorandum receipt.

2. Lieut. Charles L. Mosley, 140th Field Hospital, will have command of the truck train and will be responsible for the observance of the movement schedule of this organization.

(a) Lieut. Vehrs, 137th Field Hospital, will report to Lieut. Mosley for temporary duty.

(b) All trucks in possession of organizations of this train, with drivers (two days ration), will report before 9 a. m., September 1, 1918, as follows: From organizations east of Ventron, to Lieut. Mosley at Kruth; from organizations west of Kruth, to Lieut. Vehrs at Ventron.

3. (a) Ambulance Company 138 will continue to evacuate field hospitals until midnight Sept. 1, 1917, to the American base at Vittel. This company will cover movement of the troops of this division and the billeting areas (as per attached schedule), evacuating the sick and injured to the field hospital, 6th Division, at Gerardmer or to the Alpine ambulance station at Fraize. Location of regimental and battalion infirmaries will be reported to these hdqrs. The four Ford ambulances now with A. C. 137, with personnel and one day's rations, will report to the C. O., A. C. 138, for duty, on relief from present stations. This company, less transportation section, will clear Ventron at 1 p. m., Sept. 2, 1918, for Barbey Seroux, movement to be made by trucks via Cornimont, Vagney, and Gerardmer. On completion of movement of the division, transportation will take station with company.

(b) A. C. 137 will rendezvous at Hillside dressing station, on being relieved. They will proceed at 4 a. m., Sept. 2, 1918, for Barbey Seroux, marching to Kruth, and from this place to destination by trucks. The equipment of this company will be transported to Kruth by Ambulance Company 140 in time to be loaded on trucks at 5.30 a. m., Sept. 2, 1918.

(c) A. C. 139 will clear Le Collet at 1 p. m., Sept. 2, 1918, for Barbey Seroux, movement to be made on trucks via Gerardmer.

(d) A. C. 140, less transportation section, will proceed to Barbey Seroux at 5 a. m., Sept. 2, 1918, movement to be made by trucks via Cornimont, Vagney, and Gerardmer road. The transportation section will transport its own and the equipment of A. C. 137 from dressing stations to Kruth. Upon completion of this duty it will proceed via Wildenstein, Le Collet, and Gerardmer to company hdqrs., at Barbey Seroux.

4. (a) F. H. 139 will close at Le Menil at 10 a. m., Sept. 1, 1918, moving by truck to Arrents de Carcieux, via Cornimont, Vagney, and Gerardmer.

(b) F. H. 140 will clear Ventron at 10 a. m., Sept. 1, 1918, moving by truck via Cornimont, Vagney, and Gerardmer to Arrents de Carcieux.

(c) F. H. 137 will clear Kruth at 3 p. m., Sept. 1, 1918, proceeding to Arrents de Carcieux by trucks.

(d) F. H. 138 will clear Gerardmer at 2 p. m., Sept. 1, 1918, proceeding to Arrents de Carcieux by trucks.

(e) The 162d A. C. will maintain its present stations for the time being. Upon movement of this command it will stand relieved from duty with this division, and in compliance with telegraphic orders. 7th American Army Corps will report to the 6th Division for duty.

5. Trucks returning to Kruth for the 137th F. H. will travel via Gerardmer, Le Collet, and Wildenstein.

(a) All patients in the hospital at the time of closing will be transferred to the relieving units.

6. By direction of the division surgeon, the surgical team, less three female nurses, will accompany F. H. 137.

(a) The female nurses will proceed to Vittel, remaining there until the division arrives at its new area.

(b) The C. O., A. C. 138, will arrange for the transportation necessary for compliance with (a).

7. The X-ray unit and personnel will accompany F. H. 137.

8. The division laboratory will move with F. H. 139.

9. The medical supply depot will close at Gerardmer and Kruth at 1 p. m., Sept. 2, 1918, and move to Barbey Seroux. Two truckloads of assorted supplies will be taken. Shell dressings, on the basis of 700 to each field hospital, will be taken. Field hospitals, ambulance companies, regimental and battalion infirmaries will be fully equipped with medical supplies. The remaining supplies will be turned over to the M. S. O. (medical supply officer) 6th division.

9½. The train supply officer will make necessary arrangements for the supply of the units of this command in compliance with Orders No. 80, division hqrs., August 30th, 1918.

10. All unit commanders will make careful inspections of quarters and billets occupied by the personnel of their command, to see that they are properly policed and that no equipment is left. The billeting distribution lists will be properly closed.

11. Division orders relating to march discipline and aerial observation will be strictly complied with. The senior officer of the troops moving will be responsible for the proper discipline of his command. Men will not ride on top of trucks nor on the sides.

12. Field hospitals will not open at new locations.

13. The personnel officer will have charge of billeting arrangements of all units of this command.

14. Train headquarters will close at Gerardmer at 2 p. m., Sept. 2, and open at same hour and date at Barbey Seroux. Lieut. Mosley will furnish two trucks to train hqrs. for this movement.

During the St. Mihiel operation, September 12-16, the division was in reserve, and Field Hospital No. 137 was established at Les Cinq Tranchees, on the Nancy-Toul road, to act as a triage and to care for emergency cases; seriously sick and injured men were evacuated to the Justice Groupe at Toul.

Meuse-Argonne operation, September 26 to November 8, 1918.

The division proceeded to the St. Mihiel area, with headquarters at Commercy. On March 9, 1919, it moved to Montfort (Sarthe), remaining until April 5, when it proceeded to St. Nazaire preparatory to returning to the United States.

Division headquarters sailed from St. Nazaire on April 8, 1919, and arrived at Newport News, Va., April 20, 1919.

DIVISION SURGEONS³

Col. Wilson T. Davidson, M. C., September, 1917, to April 9, 1918.

Col. Raymond L. Turck, M. C., April 10, 1918, to January 8, 1919.

Lieut. Col. Carl Phillips, M. C., January 9, 1919, to April, 1919.

THE 36TH DIVISION^{1, 18}

(National Guard. Insignia: An arrowhead with the letter "T" superimposed)

The 36th Division was organized at Camp Bowie, Fort Worth, Tex., under authority of a War Department order dated July 18, 1917. It was composed of National Guard troops from the States of Texas and Oklahoma. Just prior to embarking, the division was brought up to war strength by the addition of several thousand National Army men from the two States mentioned.

Its composition was as follows:

71st Infantry Brigade:

141st and 142d Infantry; 132d Machine Gun Battalion.

72d Infantry Brigade:

143d and 144th Infantry; 133d Machine Gun Battalion.

131st Machine Gun Battalion.

61st Field Artillery Brigade:

131st, 132d (light), and 133d (heavy) Field Artillery; 111th Trench Mortar Battery.

111th Engineers.

111th Field Signal Battalion.

Trains (111th Sanitary Train: Field Hospitals Nos. 141, 142, 143, 144 and Ambulance Companies Nos. 141, 142, 143, 144).

The first units of the division arrived in France May 31, 1918, and the last August 2, 1918.

Immediately upon arrival all units, with the exception of the artillery, were sent to the Thirteenth training area in the vicinity of Bar-sur-Aube, where division headquarters was established on July 27. The 61st Field Artillery Brigade was detached and sent to Coetquidan, an Artillery training camp in Brittany, where it remained throughout the period of hostilities.

The division was stationed at Bar-sur-Aube until September 26, at which time it moved by rail to the area between Epernay and Chalons and established headquarters at Pocancy, Department of the Marne. Here it remained 10 days, as a reserve of the French group of armies of the center, attached to the French Fifth Army for purposes of supply.

To the north, only a short distance, the Meuse-Argonne operation was under way. The American attack between the Argonne and the Meuse was being aided by the French Fourth Army in the Champagne just to the west. In the latter sector the enemy stubbornly resisted every attack, and on October 3 the 36th Division was transferred to the French Fourth Army, with which the American 2d Division was already serving.

On the night of October 4 units of the division began moving from the Pocancy area to the vicinity of Suippes and Somme-Suippes.

The sanitary train arrived in France July 31, 1918, and joined the division at Bar-sur-Aube on August 24. Here the train underwent training, and Field Hospital No. 141 established a temporary hospital for class C men and Field Hospital No. 143 opened for skin and venereal cases. All other casualties were cared for by Camp Hospital No. 42, at Bar-sur-Aube.

On September 27 the train proceeded to Plivot, Marne, where Field Hospital No. 143 established a skin and venereal hospital and Field Hospital No. 141 opened a convalescent hospital at Aulnay. Here the train received 29 additional G. M. C. ambulances, 24 large trucks, and 1 motor cycle. On October 4 United States Army Ambulance Service Section No. 586 reported for service with the division.

Meuse-Argonne operation, October 7-26, 1918.

The division was then assembled in the Suippes-Somme-Suippes area and from this point moved to the Triaucourt area and established headquarters at Conde-en-Barrois. Here it remained until the signing of the armistice as a unit of the American First Army.

Shortly after the conclusion of hostilities the division moved to the 16th Training Area, around Tonnerre, and established headquarters at Cheney. Here it remained until April 26, 1919, when the first element started for a port of embarkation for return to this country.

Division headquarters sailed from Brest May 23 and arrived at New York, June 4.

DIVISION SURGEONS³

Col. Raymond F. Metcalf, M. C., September 3, 1917, to December 6, 1918.

Lieut. Col. John J. O'Reilly, M. C., December 7, 1918, to May, 1919.

THE 37TH DIVISION^{1, 10}

(National Guard. Insignia: A red circle with a white border)

The 37th Division was organized at Camp Sheridan, Ala., under authority of a War Department order dated July 18, 1917. It was composed of National Guard troops from the State of Ohio, supplemented by National Army men.

Its composition was as follows:

73d Infantry Brigade:

145th and 146th Infantry; 135th Machine Gun Battalion.

74th Infantry Brigade:

147th and 148th Infantry; 136th Machine Gun Battalion.

62d Field Artillery Brigade:

134th and 135th (light), 136th (heavy) Field Artillery; 112th Trench Mortar Battery.

134th Machine Gun Battalion.

112th Engineers.

112th Field Signal Battalion.

Trains (112th Sanitary Train: Field Hospitals Nos. 145, 146, 147, 148, and Ambulance Companies Nos. 145, 146, 147, 148).

The first unit of the division arrived in France June 18, 1918, and the last July 21, 1918. All elements, with the exception of the artillery, were immediately dispatched to the Bourmont (Haute-Marne) area for preliminary training. For the same purpose the artillery was sent to Camp de Souge, near Bordeaux. It never rejoined the division during the period of hostilities, but participated in the Meuse-Argonne operation, serving successively with the American Fourth Corps, American Second Army, French Second Colonial Army Corps, and the French Seventeenth Army Corps.

The division remained in the Bourmont area until the latter part of July, at which time it entrained for the quiet Baccarat sector, in the Vosges. On August 4 front-line trenches were occupied for the first time. The division was relieved in this sector September 16.

From Baccarat it moved to the area around the town of Robert-Espagne, and after a rest of four days proceeded to Recicourt, Department of the Meuse. Two days later the first elements of the division moved north to join in the Meuse-Argonne operation, soon to be launched; division headquarters was established at Verrieres-en-Hesse Farm, 4 km. (2.4 miles) south of Avocourt.

The sanitary train joined the division in the Bourmont training area and moved with it to the Baccarat sector. Here the ambulance triage was established at Merviller, with advance dressing stations at Vaxainville, Ste. Pole, and Pexonne, from which points "cab stands," or ambulance posts, were established in various towns, ambulances for these stands being sent out by the nearest ambulance company. These four ambulance dressing stations were maintained by each ambulance company in turn so each became familiar with the duties of a triage and dressing station.

The field hospitals did not receive battle casualties; these were sent direct from the triage to Evacuation Hospital No. 2, at Baccarat.

The field hospitals functioned as follows: Field Hospital No. 145 was established in the woods between Merviller and Brouville for skin and venereal diseases, except scabies; No. 146 on the Meurthe, near Baccarat. This hospital had excellent bathing facilities for the treatment of skin diseases; No. 147 was established in semipermanent barracks in the château grounds at Baccarat and cared for all minor and emergency surgical work. No. 148 occupied permanent barracks near Baccarat and cared for all cases not included in the foregoing classification.

Meuse-Argonne operation, September 26 to October 3, 1918.

On October 1 the division was relieved on a line just south of Cierges and retired to Pagny-sur-Meuse.

After a brief rest it was transported to the St. Mihiel region, and headquarters was established at Euvezin. In this area the division took over a line extending from the Bois de Hailbot, along the northern edge of the Bois de la Montagne and Bois de Charey, to the southern edge of the Etang de Lachaussee. Although the sector was normally quiet, the division was subjected to a heavy and continuous bombardment from the moment it entered. It was relieved in this sector on October 15, and again moved to Pagny-sur-Meuse.

In this sector the sanitary train took over the positions occupied by the 89th Division. Two field hospitals and a triage were established at Bernecourt; one field hospital at Houillonville and the remaining hospital took care of the sick of the division in a French hospital near Noviant. The ambulance companies established dressing stations at Pagny.

Thiaucourt, and Jaulny. The regimental stations were located near Jaulny, Beney, and Xammes. This sector was very active, with considerable artillery fire, a preponderance of gas shells, and many casualties.

Ypres-Lys operation, October 31 to November 11, 1918.

After the signing of the armistice the division started moving east; but just before reaching Brussels orders were received to turn back, and, on December 7, headquarters was located at Hondschoote, France. Detachments of the division, however, participated in the entry of King Albert into Brussels.

From Hondschoote the 37th Division moved to Wormhoudt and thence to Le Mans to embark for this country. Division headquarters sailed on March 15 and arrived at New York March 23, 1919.

DIVISION SURGEONS³

Lieut. Col. James A. Hall, M. C., September, 1917, to August 28, 1918.

Col. John C. Darby, M. C., August 29, 1918, to September 6, 1918.

Col. Louis Brechemin, jr., M. C., September 7, 1918, to February 8, 1919.

Col. John C. Darby, M. C., February 9, 1919, to March, 1919.

THE 42D DIVISION^{1, 20}

(National Guard. Insignia: Particolored quadrant representing part of a rainbow)

The 42d Division was organized in August, 1917, at Camp Mills, N. Y. Its personnel was composed of National Guard troops from 26 States and the District of Columbia. Individual enlistments and later replacements brought into the organization representatives of practically every State in the Union, thus making this division a truly composite, all-American unit.

The organization was as follows:

83d Infantry Brigade:

165th and 166th Infantry; 150th Machine Gun Battalion.

84th Infantry Brigade:

167th and 168th Infantry; 151st Machine Gun Battalion.

149th Machine Gun Battalion.

67th Field Artillery Brigade:

149th and 151st (light), 150th (heavy) Field Artillery; 117th Trench Mortar Battery.

117th Field Signal Battalion.

Trains (Sanitary Train 117; Field Hospitals Nos. 165, 166, 167, 168 and Ambulance Companies Nos. 165, 166, 167, 168).

The first unit of the division to go overseas arrived in France November 1, 1917; the last December 3, 1917.

For training purposes, the division (less artillery) was sent to the Vaucouleurs area and then to the Rimaucourt and Rolampont areas, successively. For the same purpose the Artillery brigade went to Coetquidan, rejoining the division in the Rolampont area the middle of February. With the exception of three short periods, when it supported the 4th, 32d, and 2d Divisions, successively, the Artillery brigade served continuously with the 42d Division throughout operations.

To complete its training the division was attached to the French Seventh Army Corps, in the Luneville Sector, February 21, 1918, and its units participated in raids of major and minor importance and in the routine of trench warfare. On March 31 the division took over the Baccarat Sector, relieving the French 128th Division in line.

The sanitary train arrived with the division at the Vaucouleurs area in the early part of November, 1917, with the exception of Field Hospital No. 166, which joined December 24, 1917. Here the train underwent extensive training. For the first two weeks the division had no ambulances, and infirmaries were established in every village where

troops were billeted. On November 11 Field Hospital No. 168 opened for division sick at Mauvages. When the division moved to the Rolampont area, in December, 1917, Field Hospital No. 165 established a camp hospital at Langres.

In the Luneville sector the field hospitals were so disposed as to be of most assistance to the French medical service, under whom the train served coincident with the move to this sector. Motor equipment was issued for three field hospitals and animal-drawn transportation for Field Hospital No. 168.

Field Hospital No. 166 established, on February 25, 1918, at Luneville; Field Hospital No. 167 was held in reserve at the latter place, but furnished details to assist Field Hospital No. 166. The animal-drawn Ambulance Company No. 168, at Baccarat, was split up and details were assigned to various French hospitals. Field Hospital No. 165 remained at Langres. The ambulance companies received 36 new G. M. C. ambulances. Dressing stations were not established in this sector, but numerous ambulance posts were maintained. In addition to these posts, tours of the entire area were made each day by other ambulances for the purpose of collecting such sick and wounded as had accumulated during the preceding 24 hours. Ambulance posts were changed every two days, thus giving the entire personnel an opportunity to familiarize itself with the locations and roads as well as with conditions as they existed at the front.

When, on March 31, the division relieved the French 128th Division in the Baccarat sector, it took over the line as a tactical unit on a frontage of about 15 km. (9 miles). Ambulance posts were established at Migneville, Reherrey, Montigny, St. Maurice, Badonviller, Village Negre, Pexonne, Celles Wood, Vacqueville, Neufmaisons, and Merviller, with company reserves at Bertrichamps. Tactically the sector was divided into halves, with Neufmaisons and Merviller as the controlling centers or frontal points, each having access to the front by at least three roads. Dressing stations were established at Montigny, at a sawmill near St. Maurice, and at Pexonne. A relay and regulating station, which also performed some service as a dressing station, was located at Merviller. Animal-drawn ambulances were stationed at Azerailles, Glonville, Neufmaisons, Brouville, and Deneuvre, while to meet emergencies four motor ambulances were posted at Baccarat, two of them at French Evacuation Hospital 2½ and two at Hospital No. 226. An emergency group was formed consisting of 1 officer, 24 men, and 3 ambulances. The group, whose personnel was changed daily, was posted at Bertrichamps and was available for immediate service in the event of any emergency at the front. When an emergency developed, the dressing station part of the area affected moved forward to reinforce the aid station involved, taking over the station and sending forward such of its personnel as were needed near or in the lines. As a result of this practice, seriously wounded reached the hospitals within three or four hours; frequently in less time.

The field hospital section was ordered to this sector shortly after April 23. Field Hospital No. 65 received seriously and nontransportable wounded at Baccarat until Evacuation Hospital No. 2 began to receive patients from the division. French Hospital No. 226 received the sick, Field Hospital No. 68 operated at the French hospitals "mixte" and "temporaire," and took entire charge of French Evacuation Hospital No. 2½. All of these formations were at Baccarat. The personnel of Field Hospitals No. 165 and No. 168 was supplemented by 20 female nurses. A hospital for skin cases and a camp for venereal cases were operated by Field Hospitals No. 166 and No. 167, respectively.

Champagne Sector, Champagne-Marne defensive, June 21 to July 17.

On June 21, the division was withdrawn and proceeded to east of Reims, where it took part in the Champagne-Marne operation.

Champagne-Marne operation July 15-17, 1918.

Aisne-Marne operation, July 25 to August 3, 1918.

St. Mihiel operation, September 12-16, 1918.

After the St. Mihiel operation the division remained in front-line position in the Essey and Pannes sector until September 30, when it was withdrawn and moved to the region south of Verdun, and became part of the reserve of the First Army.

Meuse-Argonne operation, October 1 to November 11, 1918.

Army of Occupation.

Division headquarters sailed from Brest on April 7, 1919, and arrived at New York on April 26, 1919.

DIVISION SURGEONS³

Col. Jay W. Grissinger, M. C., August 14, 1917, to June 30, 1918.

Col. David S. Fairchild, jr., M. C., July 1, 1918, to May, 1919.

THE 77TH DIVISION^{1, 21}

(National Army. Insignia: Facsimile of Statue of Liberty in gold against a blue sky)

The 77th Division was organized in August, 1917, at Camp Upton, N. Y. It was composed of National Army drafted men, the majority being from New York State, and from the metropolitan district in particular. The minority were drawn from all sections of the country. The organization was as follows:

153d Infantry Brigade:

305th and 306th Infantry; 305th Machine Gun Battalion.

154th Infantry Brigade:

307th and 308th Infantry; 306th Machine Gun Battalion.

152d Field Artillery Brigade:

304th, 305th (light), 306th (heavy) Field Artillery; 302d Trench Mortar Battery.

304th Machine Gun Battalion.

302d Engineers.

302d Field Signal Battalion.

Trains (302 Sanitary Train: Field Hospitals Nos. 305, 306, 307, 308 and Ambulance Companies Nos. 305, 306, 307, 308).

The first unit of the division arrived in France April 12, 1918; the last May 12, 1918.

For purposes of training, the division (less artillery) was attached to the 39th British Division in the vicinity of Eperlecques (Pas-de-Calais). For the same purposes the Artillery brigade was sent to Camp de Souge near Bordeaux. It rejoined the division in the Baccarat sector July 12, and remained with it throughout combat operations. On June 11 the division proceeded by train to the Vosges, and on June 21 entered the line in the Baccarat Sector, brigaded with the French. On August 4, it was relieved in line by the 37th Division, and marched to Le Charme, where it entrained August 6 for the Chateau-Thierry area.

In the Baccarat Sector, as in the British training area, regimental medical detachments received continual instruction, according to a very thorough schedule, in all duties incident to their service. The ambulance companies operated individually toward a central point designated as the triage, and the field hospitals were assigned to care for the several classes of cases received—Field Hospital, No. 305, skin and contagious cases; No. 306, general medical; No. 307, surgical; and No. 308, venereal. In more active sectors venereal cases were kept with their organizations. Special efforts were made to assign medical officers according to their qualifications. One of the most important developments in this sector was the organization of the triage, but this was not fully perfected until the division moved to its sector on the Vesle.

Vesle Sector, August 12–17, 1918.

Oise-Aisne operation, August 18 to September 16, 1918.

Meuse-Argonne operation, September 26 to November 11, 1918.

After the armistice the division was sent to the 9th Training Area, with headquarters established at Chateaufvillain. Here it remained until it returned to the United States. Headquarters sailed from Brest on April 17 and arrived at New York April 25, 1919.

DIVISION SURGEONS³

Col. Charles R. Reynolds, M. C., August 26, 1917, to August 5, 1918.

Col. Robert W. Kerr, M. C., August 7, 1918, to January 23, 1919.

Col. O. G. Brown, M. C., January 24, 1919, to March 3, 1919.

Lieut. Col. David B. Downing, M. C., March 4, 1919 to April, 1919.

THE 78TH DIVISION^{1, 22}

(National Army. Insignia: A lightning flash in white diagonally across a red semicircle)

The 78th Division was organized in August, 1917, at Camp Dix, N. J., from National Army men of New York, New Jersey, and Delaware, later supplemented by men from the New England States and Illinois. The organization was as follows:

155th Infantry Brigade:

309th and 310th Infantry; 308th Machine Gun Battalion.

156th Infantry Brigade:

311th and 312th Infantry; 309th Machine Gun Battalion.

153d Field Artillery Brigade:

307th, 308th (light), 309th (heavy) Field Artillery; 303d Trench Mortar Battery.

307th Machine Gun Battalion.

303d Engineers.

303d Field Signal Battalion.

Trains (303d Sanitary Train; Field Hospitals Nos. 309, 310, 311, 312, and Ambulance Companies Nos. 309, 310, 311, 312).

The first unit of the division arrived in France May 18, 1918; the last June 12, 1918.

Upon arrival the division (less artillery) was assigned to the Second Army Corps, then operating with the British in Flanders. Training was begun in the area around Nielles-les-Blequin, near the Ypres front. For the same purpose the Artillery brigade was sent to Camp Meucon, in Brittany. It left Camp Meucon on August 17 and marched to the Toul sector, where it relieved the 1st Field Artillery Brigade, on August 28-29. It supported the 90th Division in the St. Mihiel operation, and rejoined the 78th Division October 4.

On July 18, the division moved to the Arras area, with headquarters established at Roellecourt. On August 20, it left the British sector and moved to the 11th Training Area, with headquarters at Bourbonne-les-Bains (Haute-Marne). While here the division was placed in the reserve of the First Army Corps, and a march north preparatory to the concentration for the St. Mihiel operation began.

The sanitary train arrived in France June 16, 1918, and while at Le Havre half of the train (Ambulance Companies No. 309 and No. 310 and Field Hospitals No. 309 and No. 310) were detached and sent to an American training sector. They rejoined the division in September and October, 1918. On arrival in the British training sector Ambulance Companies No. 311 and No. 312 and Field Hospitals No. 311 and No. 312 were combined, forming Field Ambulances No. 311 and No. 312. These were equipped and made to conform with the British field ambulance.

Field Ambulance No. 311 took station at Bournonville and Field Ambulance No. 312 at Vieil-Moutier, where they took care of the division sick. Serious cases were evacuated to a base hospital near Boulogne. July 19 the field ambulances were separated into field hospitals and ambulance companies, the former moving to Buneville, where they again cared for division sick, and the latter to Neuville-au-Cornet, where they served the division in collection of the sick. On August 20 the train left for Bourbonne-les-Bains, where it remained until the 28th. While at this station, Field Hospitals No. 309 and No. 310 rejoined the division and United States Army Ambulance Service section No. 569 was

attached. The train left Bourboune-les-Bains on August 28-29, 1918, for Bourmont, where it remained until September 3, when it proceeded to the Toul area.

St. Mihiel operation, September 12-16.

The sanitary train remained in the areas mentioned in the St. Mihiel operation until October 4.

On the nights of October 3-4 and 4-5 the division was relieved and moved to the Foret de la Reine, and thence to the Clermont-en-Argonne area. On October 10 it moved to the eastern border of the Argonne Forest, with headquarters at Varennes. It was at this time a unit of the First Army Corps, operating as the left flank corps of the First Army.

The sanitary train proceeded with the division to Clermont-en-Argonne, with the exception of Field Hospital No. 310, which remained at St. Jacques to care for the remaining sick.

Meuse-Argonne operation, October 15 to November 11, 1918.

In the latter part of November the division moved to an area in the Cote d'Or, with headquarters at Lemur-en-Auxois. It moved to ports of embarkation the latter part of April. Headquarters sailed from Bordeaux on May 24 and arrived at New York June 6, 1919.

DIVISION SURGEON³

Col. George M. Eckwurz, M. C., August 25, 1917 to June 10, 1919.

THE 79TH DIVISION^{1, 23}

(National Army. Insignia: A gray lorraine cross on a blue shield outlined in gray)

The 79th Division was organized August 25, 1917, at Camp Meade, Md. It was originally composed of National Army men from the States of Pennsylvania, Maryland, and the District of Columbia. Later drafts brought men from New York, Ohio, Rhode Island, and West Virginia.

The organization of the division was as follows:

157th Infantry Brigade:

313th and 314th Infantry; 311th Machine Gun Battalion.

158th Infantry Brigade:

315th and 316th Infantry; 312th Machine Gun Battalion.

310th Machine Gun Battalion.

154th Field Artillery Brigade:

310th, 311th (light), and 312th (heavy) Field Artillery.

304th Field Signal Battalion.

304th Trench Mortar Battery.

304th Engineers.

Trains (304th Sanitary Train; Field Hospitals Nos. 313, 314, 315, 316 and Ambulance Companies Nos. 313, 314, 315, 316).

The first unit of the division arrived in France July 12, 1918, and the last August 3, 1918.

The division, less the artillery, immediately went into training in the 10th training area, with headquarters at Prauthoy, Haute-Marne. The artillery, upon landing in France, was sent to La Courtine (Creuse), where it remained in training until after the armistice and rejoined the division in January, 1919, in the Souilly area, south of Verdun.

The work in the training area continued until September 8, when the movement to the front started. Moving by rail to an area around Robert Espagne and Bar-le-Duc, the division detrained and proceeded by trucks and marching; on September 16 it took over the Montfaucon, or 304th, sector (about 16 km. (9.6 miles) northwest of Verdun), relieving the French 157th Division. This sector was approximately 5 km. (3 miles) in width, but on September 22, in anticipation of the Meuse-Argonne operation, was contracted to about 2.5 km. (1.5 miles). While in this sector two enemy raids were repulsed.

The sanitary train arrived with the division and underwent training at the Prauthoy training area. No ambulances were available until the latter part of August, when two sections (Nos. 502 and 506) of the United States Army Ambulance Service were attached to the sanitary train.

Meuse-Argonne operation, September 26 to October 3, 1918.

Troyon sector, October 8-25, 1918.

Meuse-Argonne operation, October 29 to November 11, 1918.

From November 11 to December 26 the division remained on the battle front, taking over a front extending from Damvillers, on the north, to Fresnes-en-Woevre, on the south, for patrol and police. On December 10, the headquarters, Headquarters Company, and 3d Battalion, 314th Infantry, proceeded to an area around Montmedy, Stenay, and Virton (Belgium) for the purpose of guarding property, listing material, and maintaining order. On February 1, 1919, this detachment rejoined the division in the Souilly area.

Moving to the Souilly area, south of Verdun, on December 27 the division found itself completely assembled for the first time in France, when it was joined in January by the Artillery brigade.

The division moved from the Souilly area during the last days of March to the fourth training area, northeast of Chaumont, around Andelot and Rimaucourt, where it was reviewed on April 12 by General Pershing. The movement from this area to Nantes and St. Nazaire began on April 19, the artillery going to St. Nazaire and the infantry to the vicinity of Nantes and Cholet.

Division headquarters sailed from St. Nazaire on May 18, 1919, and arrived at New York City on May 27, 1919.

DIVISION SURGEON ³

Col. Philip W. Huntington, M. C., August 22, 1917 to June, 1919.

THE 80TH DIVISION ^{1, 24}

(National Army. Insignia: Three blue peaks on a shield of khaki)

The 80th Division was organized August 27, 1917, at Camp Lee, Va. It was composed of National Army men from the States of Virginia, West Virginia, and western Pennsylvania.

The organization was as follows:

159th Infantry Brigade:

317th and 318th Infantry; 313th Machine Gun Battalion.

160th Infantry Brigade:

319th and 320th Infantry; 315th Machine Gun Battalion.

155th Field Artillery Brigade:

313th, 314th (light), 315th (heavy) Field Artillery; 305th Trench Mortar Battery.

314th Machine Gun Battalion.

305th Engineers.

305th Field Signal Battalion.

Trains (305th Sanitary Train; Field Hospitals Nos. 317, 318, 319, 320 and Ambulance Companies Nos. 317, 318, 319, 320).

The first unit of the division arrived in France May 23, 1918, and the last June 18.

The division, less the artillery, immediately went into training with the British in the Samer training area, a few kilometers east of Boulogne. The artillery was first sent to Redon, near St. Nazaire, but completed its training at Camps de Coetquidan and Meucon. The Artillery brigade did not rejoin the division until September, 1918.

After a short period of training at Samer, the division moved to the Third British Army sector, with headquarters at Beauval. Second line trenches between Albert and Arras were occupied. During this period front-line trenches were also occupied by battalion units. One battalion participated in an attack in conjunction with New Zealand troops, and one with the Welsh 38th Division.

The division was relieved in this sector on August 20 and moved south to the fourteenth training area, lying between Chaumont and Chatillon-sur-Seine. Here it remained until August 31. On September 1 the 80th Division moved by rail to the Stainville area, and later marched to the Tronville area. While in the latter the division composed the reserve of the First Army during the St. Mihiel operation. The 320th Infantry and 315th Machine Gun Battalion were attached to the French Second Colonial Corps and actively participated in the operation. The 155th Artillery Brigade rejoined the division while in this sector.

On September 14 the 80th Division was transported to the vicinity of Ippecourt and placed in the American Third Corps. On the night of the 20th it moved forward preparatory to entering the Meuse-Argonne operation.

The sanitary train arrived in France June 8-9, 1918. It did not join its division immediately, but was billeted and underwent training during June and July in three small villages in the Department Haute Saone—Chauvirey-le-Chatel, Chauvirey-le-Vieil, and Ouge. On July 28, Field Hospitals No. 319 and No. 320, and Ambulance Companies No. 319 and No. 320 were ordered to the British Third Army sector for further training and were furnished British equipment. Ambulance Companies No. 317 and No. 318 were detached from the train the latter part of July and were lost to the division until October.

When the division was relieved from the British training area, the sanitary train proceeded to the Tronville area, where it remained in reserve during the St. Mihiel operation.

Meuse-Argonne operation, September 26 to November 11, 1918.

On November 8 the division marched to the Cornay-Apremont area and on the 12th moved to the Les Islettes area. Here it rested until the 18th, then the division moved by marching to the fifteenth training area, southwest of Chatillon-sur-Seine.

The 155th Artillery Brigade rejoined December 5, after having served successively with the 80th, 4th, 5th, and 90th Divisions, without relief, for a period of 48 days.

On March 30, 1919, the 80th Division started for the Le Mans area, and upon arrival headquarters was established at Ecommoy. Here it remained until its return to the United States.

Headquarters sailed from Brest May 17, 1919, and arrived at Newport News May 26, 1919.

DIVISION SURGEONS³

Col. Thomas L. Rhoads, M. C., September 10, 1917, to November 13, 1918.

Col. Elliott B. Edie, M. C., November 14, 1918, to May, 1919.

THE 81ST DIVISION^{1, 25}

(National Guard. Insignia: Silhouette of wildcat in varying colors according to the different branches of the service)

The 81st Division was organized at Camp Jackson, S. C., in September, 1917, from National Army drafts from North and South Carolina, Tennessee, Florida, Illinois, and New York.

The organization was as follows:

161st Infantry Brigade:

321st and 322d Infantry; 317th Machine Gun Battalion.

162d Infantry Brigade:

323d and 324th Infantry; 318th Machine Gun Battalion.

156th Field Artillery Brigade:

316th, 317th (light), 318th (heavy) Field Artillery; 306th Trench Mortar Battery.

316th Machine Gun Battalion.

306th Engineers.

306th Field Signal Battalion.

Trains (306th Sanitary Train; Field Hospitals Nos. 321, 322, 323, 324, and Ambulance Companies Nos. 321, 322, 323, 324).

The first unit of the division arrived in France August 15, 1918; the last August 25, 1918.

For training purposes, the division (less artillery) was sent to the sixteenth training area, with headquarters at Tonnerre (Yonne). For the same purpose the Artillery brigade was sent to Valdahon (Doubs). It did not participate in operations, but rejoined the division in November, 1918.

The division proceeded to the Vosges on September 14. Arriving September 20, it took over the St. Die Sector and remained in the front line from September 20 to October 10, 1918, as part of the French Thirty-Third Corps, and later as part of the French Tenth Corps. Command of the sector passed to the commanding general, 81st Division, on October 2. On October 19 the division moved to the vicinity of Rambervillers (Vosges), and from there to the Sommedieue sector, southeast of Verdun, where it was in the reserve of the French Seventy-Second Colonial Corps. On November 7 it passed to the French Second Colonial Corps, and relieved the American 35th Division in line.²

The sanitary train arrived in France the latter part of August, 1918, and joined the division in the sixteenth training area, September 4. Here the train underwent training until September 15, when it proceeded to the St. Die sector.

Owing to the fact that in the St. Die sector the front was 37 km. (22.2 miles) and the evacuating points were two, Baccarat and Bruyeres, respectively, it was necessary to establish all field hospitals with varying functions: Field Hospital No. 321 relieved Field Hospital No. 367, 92d Division, at Bruyeres. It moved on October 12 to La Salle, where it assisted Field Hospital No. 322. Field Hospital No. 223 relieved Field Hospital No. 365, 92d Division, at Raon l'Etape. Field Hospital No. 324 relieved Field Hospital No. 366, 92d Division, at St. Die. Ambulance Company No. 324 established dressing stations at Celles, Veriges, and Pierre Percee.

Other ambulances were stationed at various points on the front and were accessible at all times for sick and wounded. During the stay of the division in this sector battle casualties were very light, only 62 being evacuated to divisional hospitals. It suffered greatly from influenza, and during the period from September 20 to October 23 field hospitals admitted 1,049 influenza cases and 165 cases of pneumonia.

Meuse-Argonne operations, November 1-11, 1918.

On November 17 the division was relieved from the Sommedieue sector, and moved to the Chatillon-sur-Seine training area, with headquarters at Mussy-sur-Seine, where it remained until May 2, when it was sent to the Le Mans embarkation center preparatory to returning to the United States.

Division headquarters sailed from Brest June 1, 1919, and arrived at New York June 11, 1919.

DIVISION SURGEON³

Col. Kent Nelson, M. C., August 25, 1917, to June, 1919.

THE 82D DIVISION^{1, 20}

(National Army. Insignia: Letters "AA" in gold on a blue circle, the whole superimposed on a red square)

The 82d Division was organized at Camp Gordon, Ga., in August, 1917, from National Army men from Georgia, Alabama, and Tennessee. At a later date the majority of these

men were transferred to other divisions, their places being filled by drafts from Camps Dodge, Travis, Devens, Upton, Dix, Meade, and Lee, so that the organizations became a truly composite "all-American" unit, as suggested by its insignia.

The organization was as follows:

163d Infantry Brigade:

325th and 326th Infantry; 320th Machine Gun Battalion.

164th Infantry Brigade:

327th and 328th Infantry; 321st Machine Gun Battalion.

157th Field Artillery Brigade:

320th, 321st (light), 319th (heavy) Field Artillery; 307th Trench Mortar Battery.

319th Machine Gun Battalion.

307th Engineers.

307th Field Signal Battalion.

Trains (307th Sanitary Train: Field Hospitals Nos. 325, 326, 327, 328, and Ambulance Companies Nos. 325, 326, 327, 328).

The first unit of the division arrived in France May 8, 1918; the last July 12, 1918.

For training purposes the division (less artillery) was sent to the Escarbotin area, west of Abbeville, where it was attached to the British 66th Division. For the same purpose the Artillery brigade went to La Courtine (Creuse). It rejoined the division in August, 1918.

The division left Escarbotin June 16, and on June 25 relieved the 26th Division in the Toul sector, where it was brigaded with the French until July 17, upon which date command passed to the commanding general, 82d Division. On August 9 it was relieved by the 89th Division and proceeded to the vicinity of Toul, with headquarters at Blenod-les-Toul.

The sanitary train arrived in France in June, 1918, and joined the division in the Toul sector. While the division was in the Escarbotin area, all casualties were cared for by the British.

In the Toul Sector the train took over corresponding units of the 26th Division, establishing at Toul two field hospitals, which functioned essentially as base hospitals, one near Royaumeix which served as a triage and one at Abbaye de Rangeval which received gassed patients. The ambulance company section, which had but 20 vehicles (8 G. M. C. and 12 animal drawn), was supplemented by United States Army Ambulance Service Section No. 647, with 30 Ford ambulances.

Marbach Sector August 17 to September 11, 1918.

St. Mihiel operation, September 12-16, 1918.

Meuse-Argonne operation, September 26 to November 7, 1918.

After its relief the division moved by successive stages to the tenth training area, with headquarters established at Prauthoy (Haute Marne), November 15, 1918. In March it moved to the vicinity of Bordeaux, with headquarters at Castres, preparatory to returning to the United States.

Division headquarters sailed from Bordeaux on May 9, 1919, and arrived at New York May 20, 1919.

DIVISION SURGEONS³

Col. Conrad E. Koerper, M. C., August 25, 1917, October 27, 1918.

Lieut. Col. Frederick G. Barfield, M. C., October 28, 1918.

THE 88TH DIVISION^{1, 27}

(National Army. Insignia: Two solid figures "8" crossed at right angles, resembling a four-leaf clover)

The 88th Division was organized at Camp Dodge, Iowa, in September, 1917, from National Army drafted men of North and South Dakota, Minnesota, Iowa, and Illinois,

later supplemented by drafted men from Missouri and Nebraska. The organization was as follows:

175th Infantry Brigade:

349th and 350th Infantry; 338th Machine Gun Battalion.

176th Infantry Brigade:

351st and 352d Infantry; 339th Machine Gun Battalion.

163d Field Artillery Brigade:

338th (light), 337th, and 339th (heavy) Field Artillery; 313th Trench Mortar Battery.

337th Machine Gun Battalion.

313th Engineers.

313th Field Signal Battalion.

Trains (313th Sanitary Train; Field Hospitals Nos. 349, 350, 351, 352 and Ambulance Companies Nos. 349, 350, 351, 352).

The first units embarked for overseas on August 9, 1918; the last units arrived in France September 7, 1918.

Upon arrival the division (less artillery) was ordered to the twenty-first training area, with headquarters established at Lemur (Cote d'Or). The Artillery brigade was sent to the artillery training school at Clermont-Ferrand, in the south of France. It never served in the division again and returned to the United States in January, 1919.

On September 14 the division was placed under the command of the French Seventh Army and moved by rail to the Hericourt training area (Haute Saone) near Belfort. For administrative purposes alone the division was under the American Seventh Corps with headquarters at Remiremont.

On September 23, 1918, the division relieved the French 38th Division in the center sector, Haute Alsace, with headquarters established at Montreux Chateau, on October 7. It held this sector until November 2, 1918, when it became a part of the American Second Army. One brigade was placed in reserve of the Fourth Corps, the remainder of the division being in army reserve, with headquarters at Lagney.

The sanitary train arrived in England on September 1, 1918, and on the 8th proceeded to the training area at Lemur, France. While in this area all casualties needing hospital care were sent to French Auxiliary Hospital No. 35 at Lemur. The train had no ambulances and sick were evacuated in automobiles. Serious cases were evacuated to Base Hospital No. 17, at Dijon, by ambulances belonging to that hospital.

On October 10 the sanitary train established headquarters at Chavennes-sur-l'Etang, in the center sector, Haute Alsace. This sector was divided by the Rhine-Rhone canal into a northern segment, held by the 175th Brigade, and a southern segment, held by the 176th Brigade. One regiment of each brigade was in the line. In the northern segment two battalions were in line, with headquarters at Hecken and Buethwiller, respectively, the northern battalion operating two advance aid posts located in dugouts in the woods and a battalion aid station at Hecken. All of these stations were easily reached by ambulance. The southern battalion operated one advance aid post in the northern end of their line and a battalion aid station at Balschwiller, which was very close to the front line. It was necessary to carry by litter from the upper station to Balschwiller, which was easily accessible by ambulance. These two stations evacuated directly to the field hospital located at Bellemagny all except gassed patients, who were sent to the triage at Retzwiller.

The segment south of the canal was held by three battalions of one regiment, with headquarters at Hagenbach, Badricourt, and Fulleren, respectively. The northern battalion operated a battalion aid station at Hagenbach and three advance posts located in the woods behind companies in the front lines. All of these stations were so located that ambulances could go within a very short distance of them. The middle battalion operated a battalion aid station at Badricourt and three advance stations located along a road behind the companies in the line. All of these stations were reached by ambulance.

The southern battalion operated a battalion aid station at Fulleren and two advance stations behind companies in the line. These stations also evacuated patients from the battalion aid stations by ambulance to the triage at Retzwiller.

The advance aid posts were equipped to do first-aid dressings and to hold a limited number of patients pending evacuation. The battalion aid stations had shock tables and were equipped to furnish hot drinks to patients needing them. Antitetanic serum was also administered here. Supplies and equipment were ample for the care of the wounded received. Regimental stations, which were used as supply depots, carrying reserve supplies, cared for only a few slightly sick men who needed care for a day or two.

After September 20, when motor ambulances were received, all transportation was pooled and ambulances were placed with each battalion and with regimental headquarters. When train headquarters was established at Chevannes-sur-l'Etang in the Alsace sector, training of the ambulance section personnel, less the transportation section, was continued. The litter-bearer section and dressing-station personnel of the ambulance companies were used as additional personnel at the field hospitals. On October 14, Ambulance Company No. 349 established, at Belfort, Rethenans Barracks Hospital, and operated there until November 8, when it was taken over by Field Hospital No. 352. A part of the personnel of Ambulance Company No. 351 established a convalescent camp at Bevilliers. Ambulance Company No. 352 established, on October 17, a triage at Retzwiller which it operated until November 6, 1918, when the train was reassembled at Vétrigne and entrained at Belfort on November 8. On the 9th, it detrained at Pagny-sur-Meuse and marched to Legney, where it remained until November 29, arriving at Hevilliers on December 1, 1918.

Field Hospital No. 350 assisted French evacuation hospital at Hericourt from September 22 to November 6, 1918. Field Hospital No. 352 established at Romagny from September 20 to November 2 for the care of gassed cases. It then took over Rethenans Barracks Hospital at Belfort, operating it until December 6, 1918. Field Hospital No. 349 established a hospital on September 20 at Bellemagny and operated it until November 5. Field Hospital No. 351 was established on September 29 at Chevannes-les-Grands, where it operated until November 4.

The field hospital at Bellemagny cared for medical and surgical cases north of the canal, the triage evacuating medical and surgical cases to the field hospital located at Chevannes-les-Grands and gas cases to the gas hospital at Romagny. During the first part of the time spent in this sector, field hospitals evacuated to Hericourt, where Field Hospital No. 350 operated a portion of the French evacuation hospital, but later a hospital was opened at Rethenans Barracks to receive patients from the division. The hospital at Hericourt was then gradually cleared and closed, personnel and equipment being moved to the hospital at Rethenans Barracks to receive patients from the division. When the time came for the division to move, all sick patients were transferred to this hospital, which was operated until all had been discharged.

On November 10 the division arrived in the Toul sector, with headquarters at Legney, 9 km. (5.4 miles) north of Toul, where arrangements were made to complete equipment for more active fighting, but these were discontinued next day when the armistice was signed.

On November 29 the division moved by marching to the first training area, at Gondrecourt (Meuse). On April 15, 1919, the division was transferred to the First Army. On April 26 it passed to the command of the commanding general, S. O. S., preparatory to its return to the United States. Division headquarters sailed from St. Nazaire on May 21, 1919, and arrived at Newport News on June 1, 1919.

DIVISION SURGEONS³

Col. J. R. Shook, M. C., August 20, 1917, to November 30, 1918.

Maj. H. Hansen, M. C., December 1, 1918, to February 27, 1919.

Maj. C. M. Dargan, M. C., February 28, 1919, June, 1919.

THE 89TH DIVISION^{1, 28}

(National Army. Insignia: A black "W" surrounded by a black circle)

The 89th Division was organized in August, 1917, at Camp Funston, Kans. Its personnel was composed of National Army men from the States of Kansas, Missouri, Colorado, Nebraska, South Dakota, Arizona, and New Mexico.

The organization was as follows:

177th Infantry Brigade:

353d and 354th Infantry; 341st Machine Gun Battalion.

178th Infantry Brigade:

355th and 356th Infantry; 342d Machine Gun Battalion.

340th Machine Gun Battalion.

164th Field Artillery Brigade:

340th, 341st (light), 342d (heavy) Field Artillery; 314th Trench Mortar Battery.

314th Engineers.

314th Field Signal Battalion.

Trains (314th Sanitary Train: Field Hospitals Nos. 353, 354, 355, 356 and Ambulance Companies Nos. 353, 354, 355, 356).

The first unit of the division to go overseas arrived in France June 11, 1918; the last July 10, 1918.

For training purposes the division (less artillery) was sent to the fourth training area, with division headquarters at Reynel. For the same purpose the Artillery brigade went to Camp de Souge, near Bordeaux. It rejoined the division immediately after the St. Mihiel operation, operating with it until the relief of the division in the Euvezin sector, on October 9, 1918, when it remained in support of the 37th and 28th Divisions, successively, until the armistice. It rejoined the 89th Division on the march into Germany.

On August 4, 1918, the division began the relief of the 82d Division in the quiet Lucey sector north of Toul, completing the relief August 10. The division operated under the Thirty-second Corps, French Eighth Army, until August 20, when it passed to the Fourth Army Corps of the newly organized American First Army.

Prior to the arrival of the sanitary train in the training area, July 15, 1918, all sick were sent to the neighboring hospitals. Field hospitals of the division were erected and went into operation July 17, 1918.

During the night of August 7-8, while the division was relieving the 82d Division, the enemy put over from 8,000 to 10,000 gas shells, causing many casualties. Most of these casualties occurred when men marching from advance positions through a deep ravine removed their masks.

Medical Department units in this sector were distributed as follows:

Ambulance Company No. 353, dressing station at Noviant, 5 km. (3 miles) behind the advanced trenches. Headquarters at Minorville, 2.5 km. (1.5 miles) behind the dressing station.

Ambulance Company No. 354, dressing station in Behanne wood, 9 km. (5.4 miles) behind the front line; headquarters at Andilly, 4 km. (2.4 miles) in rear of the dressing station.

Ambulance Company No. 355 acted as an evacuation company, removing patients from triage to Toul.

Ambulance Company No. 356 (animal drawn) was in reserve at Andilly.

The field hospitals were located and functioned as follows: No. 353 and No. 354, in French barracks at Toul, supplemented by 16 nurses, operated in effect as evacuation hospitals. Field Hospital No. 355, near Royaumeix, 10 km. (6.2 miles) from the front, received gassed cases. Field Hospital No. 356, in Abbaye de Rangeval, on the extreme left of the divisional sector, received surgical cases. After the gas attack above mentioned there were relatively few casualties in this sector, for, except during occasional raids, it was quite inactive.

St. Mihiel operation, September 12-16, 1918.

Meuse-Argonne operation, October 19 to November 11, 1918.

Army of Occupation.

Division headquarters sailed from Brest on May 10 and arrived at New York on May 31, 1919.

DIVISION SURGEONS³

Col. John L. Shepard, M. C., August 25, 1917, to September 25, 1918.

Maj. F. W. O'Donnell, M. C., September 27, 1918, to November 30, 1918.

Col. L. P. Williamson, M. C., December 1, 1918, to May 14, 1919.

Maj. F. W. O'Donnell, M. C., May 14, 1919, to June, 1919.

THE 90TH DIVISION^{1, 29}

(National Army. Insignia: Monogram of the letters "T" and "O" in red)

The 90th Division was organized in August, 1917, at Camp Travis, Tex. Its personnel was composed of drafted men from the States of Texas and Oklahoma.

The organization was as follows:

179th Infantry Brigade:

357th and 358th Infantry; 344th Machine Gun Battalion.

180th Infantry Brigade:

359th and 360th Infantry; 345th Machine Gun Battalion.

343d Machine Gun Battalion.

165th Field Artillery Brigade:

343d and 344th (light), 345th (heavy) Field Artillery; 315th Trench Mortar Battery.

315th Engineers.

315th Field Signal Battalion.

Trains (315th Sanitary Train: Field Hospitals Nos. 357, 358, 359, 360 and Ambulance Companies Nos. 357, 358, 359, 360).

The first unit of the division to go overseas arrived in France June 23, 1918; the last, July 17, 1918.

For training purposes the division (less artillery) was sent to the Department of Cote d'Or, with headquarters at Aignay-le-Duc. For the same purpose the Artillery brigade went to Camp Hunt, at Le Courneau (Gironde). It did not participate in operations, but rejoined the division after the armistice on the march into Germany.

On August 19, 1918, the division moved to the vicinity of Toul, with headquarters established at Gondreville. This move was scarcely completed when the division was ordered to relieve the 1st Division in the line in the Villers-en-Haye sector north of Toul, which was accomplished on August 24, 1918.

The sanitary train arrived in England July 10, 1918, and on the 16th joined the division in its training area in France. Headquarters of the sanitary train and field hospital section were established at Recey-sur-Ource; Ambulance Companies No. 357 and No. 358 were at Rocfort and Ambulance Companies No. 359 and No. 360 at Busseau. While in this area a program of intensive training was carried out by the entire organization. The ambulance section did not receive its vehicles until August 13, when 40 ambulances were received.

On August 23 the sanitary train relieved that of the 1st Division, headquarters being located at Rosieres-en-Haye. The 90th Division now held a section of the trenches west of Pont-a-Mousson, and the various ambulance companies and field hospitals carried out a methodical system of evacuation, with aid and dressing stations, triage and specialized field hospitals. Ambulances were assigned to the service of the several regiments, and units of the train were distributed as follows: Ambulance Company No. 357 to St. Georges, Ambulance Company No. 358 to Bois de Marbache, Ambulance Company No. 359 to Jezainville, where it established a dressing station, and Ambulance Company No. 360

to Foret d'Avrainville, in reserve. Field Hospital No. 357, at Griscourt, acted as the triage; Field Hospital No. 358, at Rogeville, received gassed and slightly sick patients; Field Hospital No. 359, at a point 2 km. (1.2 miles) south of Rosieres-en-Haye, the slightly wounded and the sick; and Field Hospital No. 360, at Bois le Pretre, the contagious and venereal cases. Seriously sick and wounded were sent to the hospitals at Toul. The division surgeon's office was established at Rosieres-en-Haye on August 22. Here a thorough course of training was given all the medical units, aid stations were established, provision was made for treatment of gassed patients, and equipment was completed for battle. Companies were filled to war strength and all preparations were made for the coming engagement. About September 2 Ambulance Companies No. 357 and No. 358 were ordered to Gezoncourt and Ambulance Company No. 360 to Joli wood, northeast of Villers-en-Haye.

St. Mihiel operation, September 12-16, 1918.

The division remained in line in the Puvencelle sector until October 10; during this period it engaged in raids of major and minor importance, and participated in demonstrations conducted against the enemy simultaneously with the initial attack in the Meuse-Argonne operation, September 26, 1918. On October 10 it was relieved by the 7th Division and proceeded to the Blercourt area west of Verdun, in the reserve of the First Army.

By September 17 the battle line had again become stationary, and operation of the medical detachments took on a more or less routine character. Ambulance Company No. 357 established an advance dressing station at Vilcey, on September 20, and a few days later Ambulance Company No. 358 opened one at Vieville, behind the left flank of the 179th Brigade.

Meuse-Argonne operations, October 13 to November 11, 1918.

Division headquarters sailed from St. Nazaire on May 28, 1919, and arrived at Boston on June 7, 1919.

DIVISION SURGEONS³

Col. Paul S. Halloran, M. C., August 25, 1917, to December 31, 1918.

Lieut. Col. Earl L. Parmenter, M. C., January 1-16, 1919.

Col. Normal L. McDiarmid, M. C., January 17, 1919, to May, 1919.

THE 91ST DIVISION^{1, 30}

(National Army. Insignia: Green fir tree)

The 91st Division was organized in August, 1917, at Camp Lewis, Wash., from drafted men from the States of California, Washington, Oregon, Nevada, Utah, Idaho, Montana, and Wyoming and from the Territory of Alaska.

The organization was as follows:

181st Infantry Brigade:

361st and 362d Infantry; 347th Machine Gun Battalion.

182d Infantry Brigade:

363d and 364th Infantry; 348th Machine Gun Battalion.

166th Field Artillery Brigade:

346th, 347th (light), and 348th (heavy) Field Artillery; 316th Trench Mortar Battery.

346th Machine Gun Battalion.

316th Engineers.

316th Field Signal Battalion.

Trains (316th Sanitary Train: Field Hospitals Nos. 361, 362, 363, 364, and Ambulance Companies Nos. 361, 362, 363, 364).

The first unit of the division arrived in France July 20, 1918; the last, July 29, 1918.

For training purposes the division (less artillery) was sent to the eighth training area, in the Department of Haute-Marne, with headquarters at Montigny-le-Roi. For the same purpose the Artillery brigade went to Camp de Souge (Gironde), and Clermont-Fer-

rand (Puy-de-Dome). It never rejoined the division nor did it participate in combat operations.

On September 7 the division left the training area and moved to the vicinity of Gondrecourt, with headquarters at that place. It was assigned to the reserve of the American First Army during the St. Mihiel operation, and headquarters was established at Sorcy, September 11, 1918.

The sanitary train arrived in England on July 20, 1918, and then proceeded to St. Nazaire, where it remained in training until August 24, when it rejoined the division at Montigny-le-Roi. The train was without motor transportation, but on August 27 United States Army Ambulance Service Sections No. 593 and No. 640 were assigned to the division.

Various specialists reported during September, as did a mobile field laboratory. The field hospitals did not function during the St. Mihiel operation; all sick were evacuated to Evacuation Hospital No. 9, at Vaubecourt.

By the end of September, the sanitary train had received sufficient motor trucks to carry all its equipment and six truck loads of supplies, but when the division entered the Meuse-Argonne operation the ambulance section of the train still had no ambulance transportation except seven animal-drawn ambulances, and the evacuations fell largely on the two ambulance sections mentioned above.

Meuse-Argonne operation, September 26 to October 16, 1918.

Ypres-Lys operation, October 31 to November 11, 1918.

After the armistice, November 11, 1918, the division remained in Belgium until January, when it moved to the Le Mans embarkation center preparatory to its return to the United States.

Division headquarters sailed from St. Nazaire on April 6, 1919, and arrived at New York April 16, 1919.

DIVISION SURGEONS ²

Col. Peter C. Field, M. C., September 4, 1917, to October 28, 1918.

Lieut. Col. John G. Strohm, M. C., October 29, 1918, to November 16, 1918.

Col. O. G. Brown, M. C., November 17-24, 1918.

Lieut. Col. John G. Strohm, M. C., November 25, 1918, to May, 1919.

THE 92D DIVISION ^{1, 2}

(National Army, colored. Insignia: Buffalo in black circle on olive-drab field)

The 92d Division was organized in October, 1917, at Camps Funston, Grant, Dodge, Upton, Meade, and Dix from National Army drafts from all parts of the United States. The division was assembled at Camp Upton, N. Y., in June, 1918.

The organization was as follows:

183d Infantry Brigade:

365th and 366th Infantry; 350th Machine Gun Battalion.

184th Infantry Brigade:

367th and 368th Infantry; 351st Machine Gun Battalion.

167th Field Artillery Brigade:

349th, 350th (light), 351st (heavy) Field Artillery; 317th Trench Mortar Battery.

349th Machine Gun Battalion.

317th Engineers.

317th Field Signal Battalion.

Trains (317th Sanitary Train: Field Hospitals Nos. 365, 366, 367, 368, and Ambulance Companies Nos. 365, 366, 367, 368).

The first unit of the division arrived in France June 19, 1918; the last July 18, 1919.

For training purposes the division (less artillery) was sent to the eleventh training area, with headquarters at Bourbonne-les-Bains (Haute-Marne). For the same purpose

the Artillery brigade went to La Courtine (Creuse). It rejoined the division in the Marbache sector (Lorraine) October 31, 1918. On August 11, the division went to the Vosges, with headquarters at Bruyeres. On August 24 it commenced the relief of the 5th Division in the St. Die sector, completing the relief August 31. It remained in line until September 21, when it proceeded to the vicinity of Triaucourt (Meuse).

The sanitary train joined the division in the eleventh training area, where it underwent extensive training. When the division moved to the St. Die sector, Field Hospital No. 367 established at Bruyeres, in connection with a French hospital. This unit functioned as an evacuation hospital for the division. In another French hospital in the same city an American operating team was also established.

Field Hospital No. 366 opened a triage at St. Die, from which the sick were transported to Field Hospital No. 367, at Bruyeres, the wounded to the French hospital where the American operating team was stationed, and the gassed to a gas hospital at St. Die.

Another triage was established at Raon l'Etape by Field Hospital No. 365. This evacuated its gassed to St. Die and its wounded to St. Die or Baccarat (Evacuation Hospital No. 2). The animal-drawn organizations, Field Hospital No. 368 and Ambulance Company No. 368, were in reserve at La Salle.

The ambulance section of the sanitary train did not function due to lack of transportation. Ambulance service was performed by an attached United States Army Ambulance Service section.

Battalion aid stations were in dugouts, well up to the front lines, or with the reserve, and patients were littered to ambulances in the rear. In some cases, however, it was possible for ambulances to reach the stations. Ambulance posts were established at Dijon, St. Jean d'Ormond, St. Michel, and Raon l'Etape. An ambulance dressing station was established at St. Jean d'Ormond, about 2 km. (1.2 miles) from the front line.

Meuse-Argonne operation, September 26 to October 4, 1918.

Marbache Sector (Second Army), October 9 to November 11, 1918.

After the armistice the division remained in the occupied area until the middle of December, when it proceeded to the Le Mans embarkation center, preparatory to its return to the United States.

Division headquarters sailed from Brest on February 7, 1919, and arrived at New York on February 17, 1919.

DIVISION SURGEONS ^{+ 3}

Col. Perry L. Boyer, M. C., November 7, 1917, to October 5, 1918.

Lieut. Col. J. S. White, M. C., October 6, 1918, to February, 1919.

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- (2) Report of Medical Department activities, 1st Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (3) Personal Reports. On file, Personnel Division, S. G. O.
- (4) Report of Medical Department activities, 2d Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (5) Report of Medical Department activities, 3d Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (6) Report of Medical Department activities, 4th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
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- (9) Report of Medical Department activities, 7th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
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- (11) Report of Medical Department activities, 27th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
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- (13) Report of Medical Department activities, 29th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (14) Report of Medical Department activities, 30th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
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- (16) Report of Medical Department activities, 33d Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (17) Report of Medical Department activities, 35th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
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- (22) Report of Medical Department activities, 78th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (23) Report of Medical Department activities, 79th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
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- (28) Report of Medical Department activities, 89th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (29) Report of Medical Department activities, 90th Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (30) Report of Medical Department activities, 91st Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.
- (31) Report of Medical Department activities, 92d Division, prepared under the direction of the division surgeon, undated. On file, Historical Division, S. G. O.

LIST OF DEPOT AND REPLACEMENT DIVISIONS

31st, National Guard of Georgia, Alabama, Florida.

34th, National Guard of Minnesota, North and South Dakota, Iowa, Nebraska.

38th, National Guard of Kentucky, West Virginia, Indiana.

39th National Guard of Louisiana, Mississippi, Arkansas.

- 40th, National Guard of California, Nevada, Utah, Colorado, Arizona, New Mexico.
- 41st, National Guard of Washington, Oregon, Montana, Idaho, Wyoming.
- 76th, National Army, draft; New England States.
- 83d, National Army, draft; Ohio and West Virginia.
- 84th, National Army, draft; Indiana and Kentucky.
- 85th, National Army, draft; Michigan and Wisconsin.
- 86th, National Army, draft; Illinois.
- 87th, National Army, draft; Arkansas, Louisiana, Mississippi.

CHIEF SURGEONS OF ARMIES ³

First Army :

Col. A. N. Stark, M. C., June 6, 1918, to December 31, 1918.

Col. T. L. Rhoads, M. C., December 4, 1918, to April, 1919.

Second Army :

Col. Charles R. Reynolds, M. C., September 28, 1918, to May 31, 1919.

Third Army :

Col. J. W. Grissinger, M. C., November 15, 1918, to July 15, 1919.

CORPS SURGEONS ³

First Corps :

Lieut. Col. William Reno, M. C., January 20 to February 13, 1918.

Col. Robert M. Culler, M. C., March 3, 1918, to June 15, 1918.

Col. J. W. Grissinger, M. C., June 30, 1918, to November 14, 1918.

Col. T. L. Rhoads, M. C., November 15, 1918, to December 2, 1918.

Second Corps :

Col. C. C. Collins, M. C., March 19, 1918, to January 18, 1919.

Third Corps :

Col. James L. Bevans, M. C., July 1, 1918, to March 16, 1919.

Fourth Corps :

Col. George H. R. Gosman, M. C., June 28, 1918, to September 22, 1918.

Col. John W. Hanner, M. C., September 23, 1918, to May 5, 1919.

Col. J. R. Shook, M. C., May 6, 1919, to May 27, 1919.

Fifth Corps :

Col. W. R. Eastman, M. C., August 19, 1918, to February 23, 1919.

Sixth Corps :

Col. Charles R. Reynolds, M. C., August 5, 1918, to September 27, 1918.

Seventh Corps :

Col. Wallace De Witt, M. C., September 7, 1918, to April 24, 1919.

Lieut. Col. R. H. Pierson, M. C., April 25, 1919, to May 27, 1919.

Eighth Corps :

Col. J. R. Shook, M. C., December 1, 1918, to March 31, 1919.

Ninth Corps :

Col. Paul C. Hutton, M. C., November 25, 1918, to December 21, 1918.

FIELD SERVICE REGULATIONS, U. S. ARMY

PART I

ORGANIZATION

ARTICLE I.—LAND FORCES OF THE UNITED STATES

* * * * *

3. **The mobile army.**—The mobile army is primarily organized for offensive operations against an enemy, and on this account requires the maximum degree of mobility.

The basis of organization for the mobile army is the division. A division is a self-contained unit made up of all necessary arms and services, and complete in itself with every requirement for independent action incident to its ordinary operations.

When several divisions are acting together they may be grouped into field armies. To the field army there are attached certain organizations of an auxiliary character, called field army troops.

When the number of field army troops attached to a field army make it necessary, they are organized into a separate brigade for purposes of supply and administration and a commander is designated and the necessary staff is assigned to him. Infantry, cavalry, or military police may be attached to this separate brigade for defensive purposes on the march. The number of troops so assigned depends on the condition of the service and the number of field army troops in the brigade. Troops for the protection of field army troops are preferably furnished from troops assigned to the line of communications.

If the conditions of the particular service require it, divisions operating independently may be furnished with the necessary field army troops. A brigade operating independently, when so designated by competent authority, is known as a separate brigade, and when so operating may be supplied with the necessary special and field army troops.

When several field armies are operating in the same theater of war and if conditions so require it, they may be organized into armies.

4. A line of communications is established for each important force about to engage in field operations of an extensive character and supplied from a separate base.

* * * * *

PART III.

ADMINISTRATION

ARTICLE IV.—THE ZONE OF THE ADVANCE

Sanitary Service

329. In general, the functions of the sanitary service are as follows:

(a) The institution of all practicable sanitary measures, to the end that the fighting forces suffer no depletion in strength due to avoidable causes.

(b) The temporary care and professional treatment of the sick and wounded and their transportation to accessible points where they are transferred with as little delay as possible to the line of communications.

(c) The supply of the necessary sanitary equipment.

In addition, the sanitary service is charged with the preparation and preservation of individual records of sickness and injury in order that claims may be adjudicated with justice to the Government and the individual.

330. The personnel of the sanitary service in the zone of the advance may be classified into two general groups, as follows: First, that attached to organizations smaller than a brigade, which functions under the immediate orders of the organization commander and accompanies its unit into combat; second, that attached to the sanitary train, which functions under the orders of the division surgeon in accordance with such general or specific instructions as he may receive from the division commander. When necessary the sanitary personnel attached to organizations may be temporarily detached, in whole or part, and directed to operate with the sanitary train.

331. **Sanitation.**—Officers and men of all arms must have a knowledge of sanitation and its importance, to the end that no depletion of the fighting force occurs through avoidable causes. The importance of adopting and carrying out proper sanitary measures can not be overestimated.

Commanders of all grades are responsible for the sanitary condition of the quarters or localities occupied by their commands and for the enforcement of all sanitary regulations. In addition they are responsible that all sanitary defects reported to them are promptly corrected.

A medical officer of experience, designated sanitary inspector, is charged, under direction of the division surgeon, with investigating and reporting upon the sanitation of the division to which he is attached. Sanitary inspectors report the result of their inspections to local commanders as well as to the division surgeon.

332. **First-aid packet.**—Every man with the division carries a first-aid packet. The sanitary detachments with organizations carry pouches containing appliances for first aid and stimulants. The combat train carries litters and the necessary equipment for regimental aid station.

333. **Regimental aid station.**—This station, established by each regiment or independent battalion during combat and when justified by the number of wounded, is the place to which all wounded of the organization are carried by its sanitary personnel, and where emergency treatment is administered. The position of the station is fixed by the organization commander and is as near the firing line as possible. This station will often be but little more than a place for assembling the wounded, as its personnel belongs to the organization and, therefore, must be prepared to move with it. After receiving emergency treatment all wounded able to walk (except those with trivial wounds, who are sent back to the line) are directed to the station for slightly wounded; those unable to walk are delivered to the bearers sent forward from the sanitary train.

The equipment of the regimental aid station is carried on the combat train. It is operated by the sanitary personnel of the organization.

334. **Dressing stations.**—These stations, established during combat by ambulance companies of the sanitary train in the immediate rear of the line or regimental aid stations, are the places where all wounded unable to walk are collected from regimental aid stations by bearers of ambulance companies. If conditions so warrant, these bearers may be assisted in their work by portions of the organization sanitary personnel. From these stations the wounded are transported by ambulance companies back to field hospitals. The equipment of dressing stations is more elaborate than that of the regimental aid station. It provides light nourishment and stimulants for the wounded and affords facilities for more elaborate dressings and for emergency surgery.

The equipment for dressing stations and the necessary personnel are supplied by the ambulance companies of the sanitary train.

335. **Ambulance companies.**—Ambulance companies push up close to the rear of the fighting troops and as near the line of regimental aid stations as possible and establish dressing stations. In addition to their functions at the dressing stations, they are charged with the transportation of the wounded back to field hospitals and with providing the necessary equipment for infirmary service in camps. When field hospitals have not been set up and when sanitary columns or railway hospital trains of the line of communications are reasonably accessible, ambulance companies transport the wounded directly to them.

336. Field hospital companies.—Field hospital companies form part of the sanitary train. They are set up when conditions so warrant ordinarily some 3 or 4 miles from the battle field, and are the places to which the wounded are transported by ambulance companies. Their position must be one accessible both from the front and rear and where good water is available. Field hospitals are not set up when the sick or wounded can be turned over conveniently to elements of the sanitary column or railway hospital trains of the line of communications. Canvas is pitched only when buildings are not available or are inadequate for the purpose of housing the wounded.

The equipment of field hospitals, while more elaborate than that of dressing stations and while providing canvas for protection of the wounded from the weather and facilities for more extended surgical work, is nevertheless limited to providing necessities for the sick and wounded pending their evacuation to the rear by the line of communications. (See also par. 268.)

337. Evacuation points.—The sanitary column of the line of communications includes ambulance companies and evacuation hospitals; there may also be available railway hospital trains and boats, any or all of which may be used as the means for the evacuation of the sick and wounded from the division. The places at which the sick and wounded are transferred from the division to the line of communications elements are termed evacuating points.

The positions of evacuating points are fixed in the same manner as is the refilling point of the supply service (see par. 288) and communicated directly from division headquarters to the commander of the sanitary train.

338. Station for slightly wounded.—A station for slightly wounded is established when combat is imminent to relieve dressing stations and field hospitals of the slightly wounded who can walk and require but little attention. Its position is fixed in division orders. It is operated by the personnel of the sanitary train detailed for the purpose. It is conspicuously marked so that it can be readily found.

339. The sanitary train.—The sanitary train is composed of a train headquarters, ambulance companies, field hospital companies, camp infirmaries, medical supply unit, and reserve medical supplies. The sanitary train is commanded by the senior medical officer on duty with the train. Upon its release from the control of the commander of trains, it operates in accordance with orders or instructions received from division headquarters. (C. F. S. R., Nos. 3 and 10.)

340. Service in camps.—In camps an ambulance service is furnished from the sanitary train. Infirmaries are set up at convenient points by order of the division surgeon and operated by the sanitary personnel attached to the organizations which the infirmary serves. Here cases not requiring hospital treatment are cared for, all other cases being promptly removed by the ambulance service. The senior medical officer of the units served by the infirmary assumes charge of the same and is authorized to call directly on the other organizations for their proportionate share of medical officers and sanitary personnel for the infirmary service. The sergeant, Hospital Corps, detailed with the infirmary, remains with it in charge of the equipment. If necessary, field hospitals are set up for the reception of the seriously sick and wounded. (C. F. S. R., No. 3.)

341. Service on the march.—When out of the presence of the enemy, ambulances are ordinarily ordered distributed by the division commander throughout the column, in the rear of regiments, battalions, etc. A camp infirmary is assigned to each brigade and marches in its rear, and a field hospital should be so located in the column of march as to permit of its being available for the reception of seriously sick and injured as soon as possible after the arrival of troops in camp. (C. F. S. R., No. 3.)

342. During marches in the presence of the enemy, ambulance companies are kept intact. It may be advisable to assign one or more of these companies to a position in the column of the combatant troops, but any further dispersion is inadvisable. When combat is imminent and when so ordered by the column commander, the ambulance companies fall out of the column, and as soon as the combatant troops have passed they proceed to function as described in "Service in Combat." (See par. 111.)

343. A man falling out from sickness or injury is sent with a pass, showing his name, company, and regiment or corps to the medical officer in the rear. The latter returns the pass, having indicated thereon the disposition made of the man.

If the man is unable to walk he is picked up by the first ambulance and cared for. If able to walk he may either be required to follow immediately behind his organization or ordered to await the arrival of the sanitary train. In the latter case, he is furnished with a tag showing the orders given him.

The arms, personal equipment, and clothing of soldiers who fall out are carried with them.

The horse, saber, and horse equipment of a mounted soldier admitted to the ambulance, or otherwise disposed of, are taken back to the troops by the noncommissioned officer that accompanied him.

344. **Service in combat.**—In the absence of medical assistance the wounded apply their first-aid packets, if practicable. With this exception the care of the wounded devolves upon the sanitary troops, and no combatant, unless duly authorized, is permitted to take or accompany the sick or injured to the rear.

345. The sanitary personnel of organizations must remain with it when advancing into action and during the whole course of an engagement. Accordingly the wounded will be treated where their wounds are received, and the sanitary personnel will pause, if the organization is moving, only so long as is necessary to give appropriate first aid. At a later stage of the combat, when the movement of the organization permits and when justified by the number of wounded, a regimental aid station is established and operated.

346. When combat is imminent, the station for slightly wounded is announced in division orders, and thereafter it is to this station that all disabled men able to walk are ordered to report. They are furnished with a tag showing the orders given them by the medical officer authorizing their proceeding to this station.

347. The evacuation of the wounded from regimental aid stations when established, and the evacuation of the wounded left by the organizations during an advance when a regimental aid station has not been established, devolves on the personnel of the sanitary train. In the case of a deliberate attack on the enemy in position or when our forces occupy a defensive position, the positions of dressing stations are fixed in orders by the division commander, and communicated to the troops. The division commander in this case advises the commander of the sanitary train as to the position of the field hospitals.

348. In the case of a *rencontre* engagement, the work of establishing dressing stations, field hospitals, and of evacuating wounded during combat from the dressing station to the field hospital, or in certain cases directly to the line of communications, must be left to a great extent to the initiative and judgment of the commander of the sanitary train and his subordinates. To this end the commander of the sanitary train sends forward one or more ambulance companies to make contact in certain prescribed areas with the sanitary formations of the combatant units. When ambulance companies have been assigned positions in the column of march of combatant troops, they are ordinarily utilized in this work. The remaining ambulance companies ordinarily accompanied by one field hospital and under the immediate command of the sanitary train commander follow, and are held together in reserve at a certain prearranged position selected by the sanitary train commander and by him communicated to the commander of the ambulance companies sent ahead. The other field hospitals remain for the time being under the control of the commander of trains, to be brought forward later if required. The ambulance company commanders ordered to make contact with the combatant organizations push forward agents for the purpose of sanitary reconnaissance and for arranging for the position of the dressing stations and for determining the best lines of approach to them. When so ordered they establish dressing stations and commence collecting wounded from the different regimental aid stations, ultimately sending them back to the field hospital at the prearranged point. The commander of the sanitary train keeps himself advised by means of agents of the progress and development of the

battle and the number of casualties in certain areas and from these reports and from orders received from the division surgeon, he pushes forward additional ambulance companies when required, prescribing the area of their respective activity and the point to which their wounded are to be transported. At the same time he may order forward such additional field hospitals as may be required.

349. Search for wounded.—After an engagement commanders organize a thorough search of the battle field in their vicinity for the wounded and assist in their protection and removal. The dead are collected by details from the line as soon as practicable after the battle and disposed of as the commander directs.

231. * * * Field hospitals immobilized for the care of the wounded will be evacuated as rapidly as the condition of the wounded and facilities for evacuation to the rear will permit. When the decision has been adverse and a retreat is necessary, all the severely wounded and the wounded whose transport might delay or impede the retreat will be left behind with the sanitary personnel and supplies necessary to their immediate needs.

350. Before a command enters upon a campaign, every member thereof is provided with an identification tag by which he can be identified if killed or wounded. Such tags are not removed from the dead, but are left on the bodies when interred or otherwise disposed of. Tags found on the bodies of the enemy's dead are collected and turned over to the commander of trains, who sends them to the provost marshal at the base.

351. Retreat.—In a retreat such portion of the sanitary personnel of the division as is required will remain with the sick and wounded that can not be moved, under the protection of the Red Cross flag.

352. American National Red Cross Association.—The services of this association, its equipment and personnel are utilized under the immediate direction of medical officers to the greatest extent possible in the care of sick and wounded in the service of the interior and on the line of communications. Their services are not utilized in the zone of the advance.

353. Badge of neutrality.—The emblem of neutrality is a red cross on a white ground. All persons belonging to the sanitary service, including the Red Cross Association personnel and chaplains attached to the army, wear on the left arm a brassard bearing this emblem stamped by competent authority. Those not uniformed carry a certificate of identity in addition to the brassard.

All sanitary formations and establishments display a Red Cross flag accompanied by the national flag. At night the position of sanitary formations are marked by green lanterns.

MANUAL FOR THE MEDICAL DEPARTMENT, 1916

ARTICLE XII.—THE THEATER OF OPERATIONS, GENERAL

REQUIREMENTS FOR AN EFFICIENT SANITARY SERVICE

627. The mobility of an army may be the factor which determines its success or its failure. It is therefore highly important (1) that the army should be relieved as promptly as possible of the encumbrance of its sick and wounded; (2) that this should be accomplished without obstructing other military operations in progress, and with the minimum of transportation and personnel.

(a) In view of these requirements, it is evident that the sanitary service must be thoroughly organized; that it must operate systematically, and that its personnel should have had thorough preliminary training.

628. Efficient medical administration should therefore provide: (1) In the zone of the advance, only emergency treatment for the wounded and their prompt transportation to the rear; (2) in the zone of the line of communications, a service so complete in equipment, supplies, and personnel that it will afford the sick and wounded all the facilities and comforts of the service of the interior, rendering it unnecessary to transport farther to the rear such patients as will later be able to rejoin their commands; (3) in every sanitary station from the firing line to the base, a careful classification of the sick and wounded according to the nature and severity of their disabilities, with a view to such disposition as will prevent any unnecessary depletion of the combatant forces.

629. For the evacuation of the sick and wounded to the rear it will be necessary for the Medical Department to utilize all available transport. In addition to that normally assigned to the department, combat wagons and field train wagons when authorized by competent authority, automobiles, and other impressed civilian transportation of all kinds, should be obtained and used when the situation demands

ARTICLE XIII.—THE ZONE OF THE ADVANCE

CLASSIFICATION OF THE SANITARY SERVICE

630. The sanitary personnel of the zone of the advance may be divided into two general groups, as follows: First, that attached to line organizations smaller than a brigade, which functions under the immediate orders of the organization commanders; second, that comprising the sanitary trains, which functions under the orders of division surgeons in accordance with such general or specific instructions as they may receive from their division commanders.

SANITARY TROOPS ON DUTY WITH LINE ORGANIZATIONS

(See also Field Service Regulations)

631. Sanitary troops with line organizations, including detachments with regiments, battalions, trains, etc., vary in personnel with the strength of the organization served and the nature of the duties they are required to perform. (See Tables of Organization: *War—Regimental Organizations*.)

632. When a regiment is operating independently the Medical Department equipment available for its use consists of the first-aid packet carried by each officer and enlisted man of the Army as a part of his individual equipment; the articles carried as

individual equipment by each medical officer (par. 864) and by each member of the Hospital Corps (par. 865); the combat equipment (pars. 866 and 867); the camp infirmary equipment (pars. 869 and 870); and the additional articles necessary for the establishment of a regimental hospital (par. 872).

(a) The additional articles for the regimental hospital will be taken to the field only under circumstances requiring the organization to provide hospital care for its own sick and wounded.

633. When a regiment or other line organization is operating as a part of a division the Medical Department equipment provided for its exclusive use consists of the first-aid packets and individual equipments mentioned in the preceding paragraph, and the combat equipment (pars. 866 and 867). A small box of surgical dressings (par. 954) and one or more litters are carried on each ammunition wagon. The requisite articles for the establishment of the aid station are carried on the pack mule allotted the sanitary service, which marches with the combat train of the organization. The medical officer responsible for this equipment will see that it is complete and that it is maintained intact for service in combat.

(a) On the march and in camp, with the exceptions noted in paragraph 601, the medical supplies and dispensary service required by regimental organizations are provided through the medium of the camp infirmary.

(b) In combat it is contemplated that the expenditures of dressings, etc., from the equipment of regimental organizations will be replenished from the reserve supplies of the nearest ambulance company or camp infirmary. (See par. 551.)

634. The surgeon of a line organization is both an advisory and an administrative officer (par. 361).

(a) He commands the sanitary troops on duty with the organization.

(b) He is the adviser of the organization commander in medical and sanitary matters and, to the extent of his authority, is responsible for the execution of sanitary measures in connection with the organization.

(c) He provides care and treatment for the sick and wounded, and is responsible for the efficient performance of the entire sanitary service of the organization.

(d) He makes such sanitary inspections as may be necessary. In connection therewith he supervises the water supply and its purification, the sanitation of kitchens, the disposal of garbage and waste water, the police of latrines and urinals and the filling in and marking of the same when discontinued, the police of bathing places and picket lines, the measures taken for the destruction of flies and mosquitoes, and all other sanitary procedures necessary to preserve the health of the command.

(e) He instructs, at suitable times designated by the commanding officer, the entire personnel of the organization in personal hygiene and first aid.

(f) He trains his subordinates in all departments of field sanitary work.

(g) He makes timely requisition for necessary supplies and equipment.

635. On the march the duties of the sanitary personnel are to render first aid where required, to transport the sick and wounded, and to make suitable disposition of them on arrival in camp.

636. Ordinarily the surgeon marches with the regimental commander, and one medical officer marches in the rear of each battalion. Each officer is mounted and accompanied by a mounted orderly. The remaining regimental sanitary personnel usually march with the battalion units.

637. When out of the presence of the enemy, ambulances are ordinarily ordered distributed by the division commander throughout the column, in the rear of regiments, battalions, etc. Unless otherwise ordered these ambulances join their companies at the end of the day's march or at the beginning of an engagement. When a regiment operates independently it may be assigned its full quota of four ambulances. (See pars. 673 and 721.)

638. A soldier falling out of the marching column from sickness or injury is sent to a medical officer in the rear, with a pass from his company commander, showing the soldier's name and organization. The medical officer returns the pass, showing the

disposition made of the soldier. The man may be given authority to ride in the ambulance at the rear of the regiment, or his arms and personal equipment may be carried in the ambulance, and he may march at the rear of the regiment with the sanitary detachment.

639. When an ambulance at the rear of a regiment is filled it may fall out and join its company at the rear of the column, and the director of ambulance companies or the ambulance company commander may send forward another ambulance to take its place; or the ambulance may remain with the regiment, and men requiring transportation may be given diagnosis tags authorizing their transportation by the ambulance company in the rear. In the latter case the men fall out and report to the commander of the ambulance company for transportation.

640. The arms, personal equipment, and clothing of a soldier who falls out are taken with him in the ambulance. The horse, saber, and horse equipment of a soldier admitted to the ambulance or otherwise separated from his organization because of sickness or injury are taken back to the troops by the noncommissioned officer who accompanied him.

641. Upon halting for the night all but the trivial cases are taken in charge by a field hospital designated by the division surgeon, or they are sent to the rear, as the conditions may warrant. It may be necessary to leave them under shelter—in houses, if practicable—with the necessary food and attendants until taken in charge by sanitary troops from the line of communications.

642. In combat the duties devolving on the sanitary personnel are to render first aid to the wounded; to establish and operate an aid station, and to collect the wounded thereat; to direct those with trivial wounds to return to the line, and to direct others with slight wounds to the station for slightly wounded; and in exceptional cases to transport the severely wounded to the dressing station.

643. The detachment invariably accompanies its line unit in combat, rendering first aid to as many as possible of those who fall out, without losing touch with the command. It is assisted by the band if the latter is assigned to duty with the sanitary troops.

644. Unless medical assistance is available, the wounded apply their first-aid packets, if practicable. With this exception the care of the wounded devolves upon the sanitary troops, and no combatant, unless duly authorized, is permitted to take or accompany the sick or wounded to the rear.

645. With dismounted troops the aid station, not more than one for each regiment or smaller independent unit, will be established as the engagement develops and the number of wounded warrant it providing it is probable that the command will remain, for a short period at least, near the proposed location of the station. With a mounted command the sanitary detachment accompanies the troops during the whole course of the engagement, pausing only so long as is necessary to render first aid and to collect the wounded at some place where they can be turned over to an inhabitant of the country to be cared for. The commander of the advancing foot troops or of the advance section should be promptly notified of the location of the wounded thus collected.

646. In locating the aid station it is of the highest importance that advantage be taken of any shelter from fire which the terrain affords. To a large extent the distance of the station from the firing line must depend upon this consideration. It will be borne in mind that any building which offers a good target for artillery fire is worse than no shelter at all, and that the nearer the station is to the front the safer it will be from dropping projectiles.

647. The surgeon remains, as a rule, at the aid station, with a noncommissioned officer and the necessary number of privates, for to this station the commanding officer will send information or orders which he may have to communicate to the surgeon, and through this station the surgeon gains contact with the units of the sanitary train in the rear. The other medical officers and the remainder of the detachment keep in touch with the firing line, tending the wounded as far as possible and conveying the helpless to the station, if practicable. If the enemy's fire is such that the wounded can not reach the station, advantage is taken of trenches, ravines, and other inequalities of the ground affording

temporary shelter, and the wounded are brought in during intervals in the firing or after nightfall.

648. No one belonging to the sanitary personnel of an organization will go farther to the rear than the aid station, except by authority of the surgeon.

649. The aid station, which will often be but little more than a place for assembling the wounded, should not undertake elaborate or fixed arrangements for their care and treatment, as its personnel must keep in touch with the regiment and be prepared to close or move the station without delay when the regiment moves. The treatment given will usually be limited to first aid and to the readjustment of dressings. Occasionally it may become necessary to ligate an artery or to perform an emergency operation. Fractures, if not previously immobilized, should be put in splints. Diagnosis tags will be attached to all wounded and the duplicates disposed of as directed in paragraph 571. The arms and equipment of wounded separated from their companies and taken in charge by the Medical Department should, so far as practicable, accompany them until they reach the line of communications.

650. In the course of battle the advance of troops may result in the aid station being separated so far from the line that it can no longer fulfill its purpose. In this case it must be advanced to a more favorable location. Ordinarily the wounded left behind will be looked after by the advancing ambulance company, but if it is apparent that this will be long delayed a small portion of the regimental personnel may be detailed to remain with them. Similar action will be taken in case of retreat. The closing or moving of the station rests on the decision of the regimental surgeon. In reaching his decision he should be governed by the primary necessity of always keeping in touch with the regiment.

THE SANITARY TRAIN

651. The sanitary train is composed of camp infirmaries, ambulance companies, and field hospitals. It is commanded by the division surgeon.

THE DIRECTOR OF AMBULANCE COMPANIES

652. For each division a medical officer of the grade of major is designated as director of ambulance companies, and there is assigned under him one sergeant and one private first class or private, Hospital Corps, both mounted. The relation of the director of ambulance companies to the division surgeon and to the ambulance companies is similar to that of a major of the line to the colonel of his regiment and to the companies of his battalion. He maintains no office of record, but communications from the division surgeon to the ambulance companies and vice versa are sent through him for his information.

653. The director of ambulance companies will make frequent inspections to ascertain whether all the companies have their regulation allowance of personnel and equipment, whether the personnel are properly instructed, and whether the equipment is in good condition, and will take the necessary measures to correct any deficiencies found therein.

654. On the march the director will ordinarily accompany one of the ambulance companies on duty with the marching troops and will superintend the ambulance service of the march. He will keep the division surgeon advised as to where communications will reach him.

655. His duties during and immediately after combat comprise supervision of the removal of the wounded from the aid stations (and in emergencies from the front) and their care and treatment en route, via the dressing stations, to the field hospitals. His activities cover, therefore, the entire zone between the firing line and the field hospitals, with the terrain of which he should make himself familiar, and he will proceed from point to point thereof as his presence may be required. As far as practicable he will keep the division surgeon apprised of his movements.

(a) He will, under the division surgeon's authority, direct the opening of dressing stations at the places decided upon. Under the same authority he will direct such changes

in the location of these stations as may be necessary during the battle, and their closing, and the reassembling of the several units for movement with the division as soon as practicable after its conclusion.

656. The director of ambulance companies also commands the camp infirmaries of the division, as outlined in paragraph 659.

CAMP INFIRMARIES

657. Each regiment of a division has assigned to it in time of peace one camp infirmary equipment (pars. 869 and 870), including one wagon belonging to the divisional sanitary train. (See Tables of Organization: *Peace—Regimental Organizations*.)

658. When the division is assembled the camp infirmary equipments authorized for the service of the mobilized division (usually on the basis of one for each brigade) are retained for duty as camp infirmaries. The remaining camp infirmary equipments, except transportation, are turned in to the officer in charge of medical supplies and the wagons thus released are assigned to those units of the sanitary train for which no transportation is provided in time of peace.

659. The camp infirmaries retained for the service of the division will be placed by the division surgeon under the immediate charge of the director of ambulance companies. This officer will receipt and account for the property and will be held responsible for its condition and completeness at all times. He will have general charge of the assignment of the infirmaries to the troops which they are intended to serve and he will keep the service records and accounts of the permanent personnel on duty therewith. (*C. M. M. D.*, No. 3.)

660. For permanent duty with each infirmary there will be required one sergeant, Hospital Corps, in immediate charge of the property, and one driver. The men and animals of the camp infirmary will usually be attached, for rations and forage, to one of the regiments served by the infirmary or to an ambulance company.

661. The camp infirmaries with each division will be numbered from one upward consecutively, and the wagon belonging to each infirmary will be marked as prescribed in Tables of Organization. (See also par. 545.)

662. The primary function of the camp infirmary is to furnish dispensary facilities to one or more organizations during field service when other provision is made for the hospital treatment of all sick and wounded or for their prompt evacuation to the rear. When such provision is not made and the camp infirmary becomes the nucleus around which a camp hospital (see par. 604) is developed, it becomes an immobile unit, and if the organization to which it is attached should move, another camp infirmary will be required to accompany it.

663. The senior medical officer of the units served by the infirmary assumes charge of the infirmary service and is authorized to call directly on the other organizations for their proportionate share of medical officers and sanitary personnel for such service.

664. The sergeant on permanent duty with the infirmary, after reporting to the senior medical officer of the units served, remains in subordinate charge of the equipment as the representative of the director of ambulance companies.

665. When the camp infirmary is to be opened for service the surgeon in charge will, with the approval of the camp commander, notify the surgeon of each other unit which the infirmary is to serve of the time at which it will be available for his use to hold sick call. He will maintain such service at the infirmary as the conditions may warrant.

666. In combat the equipment of the camp infirmary may be utilized for the establishment of a station for slightly wounded. (See par. 710*b*.)

THE AMBULANCE COMPANY

667. The ambulance companies will be numbered from 1 upward in a single consecutive series for the entire Military Establishment.

668. The vehicles of the ambulance company will be marked as prescribed in Tables of Organization. (See also par 545.)

669. The commanding officer of the ambulance company is under the immediate orders of the director of ambulance companies, when there is one; otherwise, he is under the immediate orders of the division surgeon.

670. The personnel of an ambulance company at war strength, as given in Tables of Organization, are ordinarily distributed as follows:

(a) With the dressing station, including the litter bearers: 4 officers, 1 sergeant first class, 6 sergeants, 1 acting cook, 40 privates first class and privates, all of the Medical Department.

(b) With the wheeled transportation: 1 officer, 1 sergeant first class, 1 sergeant, 1 acting cook, 28 privates first class and privates (1 as farrier, 1 as saddler, 2 as musicians, 12 as ambulance drivers, and 12 as ambulance orderlies), all of the Medical Department; also 1 sergeant (blacksmith) and 3 privates (drivers) of the Quartermaster Corps.

671. The function of the ambulance company is to collect the sick and wounded, to afford them temporary care and treatment, and to transport them to the next sanitary unit in the rear.

672. In camp the ambulance company operates an ambulance service between the camp infirmaries and the field or other hospitals.

673. On the march ambulances are distributed among the marching troops, usually one to each regiment, for the purpose of supplying transportation to those who become unable to march. (See pars. 637 and 721.)

674. In combat the company operates in two parts (par. 670). The first establishes and operates a dressing station and collects the wounded thereat; the second operates the wheeled transportation in evacuating the wounded.

675. The dressing station party, including the litter bearers, with its equipment on pack mules, moves forward in rear of the troops ready to establish the dressing station.

676. The location of the dressing stations and the number to be established will be determined by the division surgeon acting under the instructions of the division commander. The director of ambulance companies will supervise their opening, giving the necessary orders therefor to the commanders of the ambulance companies. He will report their opening to the division surgeon.

677. Exact rules can not be formulated as to the time when the dressing station shall be opened. Generally speaking, when the advance has ceased and the wounded are so numerous that they can no longer be cared for by the regimental personnel, the time has come for the opening of the station.

678. It is desirable that the site selected for a dressing station have the following advantages: (1) Protection from rifle fire, (2) protection from direct artillery fire, (3) accessibility for wheeled transportation, and (4) a supply of water. Effective shelter from fire is the chief desideratum. A site inaccessible to ambulances on account of exposure to fire need not invariably be condemned, for the greater part of the work of the ambulances is done after the close of the battle or after nightfall. The station will always be pushed as far to the front as possible to reduce to the minimum the distance over which the wounded must be carried on litters.

679. In some cases in which the establishment of the dressing station has been delayed, or in which the troops are about to move forward, it may be possible to locate the dressing station at the aid station, thus practically eliminating one station. Under these circumstances the dressing station assumes the work of the aid station and the personnel of the two stations cooperate until the aid station moves forward.

(a) The requirement that the sanitary personnel with the combatant organizations keep in touch with those organizations may make it necessary for them to leave the wounded where they fall, pausing only to administer such aid as may be absolutely essential. Cases thus left will be collected and cared for by the dressing station party as it advances. (See par. 650.)

680. As soon as the dressing station is opened its bearers under the direction of a medical officer proceed to the front as far as the enemy's fire permits. Ordinarily they

will be divided into as many sections as there are aid stations, each under a noncommissioned officer, and one section will proceed toward each aid station.

(a) They direct wounded who are able to walk to the station for slightly wounded. They transport other wounded from the aid station to the dressing station. When practicable they also assist the regimental medical personnel in the care and removal of wounded from points in advance.

(b) Meanwhile the commanding officer of the company with the dressing station personnel proceeds to put the dressing station in condition to receive patients. When possible for wheeled transportation to reach the dressing station, a message should be sent to the officer in charge of the ambulance train directing him to report at the station with the ambulances.

681. The work of the dressing station is carried on under the following departments:

Dispensary.

Kitchen.

Receiving and forwarding.

Slightly wounded.

Seriously wounded.

682. All wounded will pass through the receiving and forwarding department. Those whose injuries are not sufficient to incapacitate them for the present performance of their military duties will, after receiving the necessary treatment, be directed to return to their units, and the fact that such directions have been given them will be noted upon their diagnosis tags. Other slightly wounded, able to walk, will, after like treatment, be immediately directed to the rear in command of their highest ranking officer or soldier. Generally they will be sent to the station for slightly wounded.

683. At the dressing station only such operations will be performed as may be immediately required to save life or to render the patients fit for farther transportation. Permanent occlusive dressings may be applied if time permits. The rules to be followed generally are that no operative or other interference should be attempted under conditions unfavorable for asepsis or antisepsis, and that no wounded for whom transportation is available should be delayed at the dressing station. Conditions in these respects must vary widely in different battles; when there are good facilities for the surgical treatment of cases and at the same time lack of transportation for wounded, it would manifestly be proper to give them definitive treatment.

684. A memorandum showing the number of patients received and their disposition will be kept in the receiving and forwarding department. Diagnosis tags should be applied to all wounded not previously tagged and supplemental entries made on tags as required. For further records of sick and wounded required of ambulance companies, see paragraph 575 et seq.

685. The ambulances and wagons remain farther to the rear than the dressing station (usually in proximity to some unit or station through which communication with division headquarters may be maintained) until it is practicable to determine a line of evacuation for the wounded. As soon as the dressing station is established and the location of the field hospital is determined, a safe route for the ambulance service between these two establishments is sought, and, when found, the ambulances advance to begin the removal of wounded from the dressing station. The wagons of the ambulance company, carrying a reserve of dressings, may remain at a field hospital, whence the supplies may be sent forward by ambulances returning to the dressing station. (See par. 728.)

686. Ambulances must reach the station as early as possible even at the risk of losses. Ordinarily ambulances will carry wounded only from the dressing station to the nearest field hospital, immediately returning to the former; any other destination for wounded must be prescribed by the division surgeon.

687. When the ambulances are insufficient the division surgeon should request the division commander to permit the Medical Department to make use of part or all of the transportation of the division on its return from the front.

688. During the daytime when a battle is still in progress it will rarely be possible for ambulances or other wheeled vehicles to advance farther to the front than the dressing station. Opportunity to have them do so will sometimes occur at night, and on the conclusion of an engagement they should always be used, as far as may be, at all points on the battle field.

689. To prevent further injury, it is important that the wounded should be handled or otherwise disturbed as little as possible in the course of their transportation to the rear. No wounded man once placed on a litter should be removed from it without evident necessity until he reaches the field hospital, whether he is transported by ambulance or otherwise.

690. While authority to close a dressing station or to move it must ordinarily be obtained from the division surgeon, nevertheless under exceptional conditions, when communication with the division surgeon is interrupted, the director of ambulance companies may, if he deems the emergency requires it, close or move the station at discretion. In this case the division surgeon will be notified as soon as possible of the action taken.

(a) Should it be impossible to evacuate the wounded at a dressing station before it is closed or moved, by reason of retreat or otherwise, the commanding officer of the ambulance company will leave with the wounded, according to their number and condition, sufficient medical personnel and supplies to provide for their immediate necessities, and will advance or withdraw with the division the remainder of the personnel and equipment.

THE DIRECTOR OF FIELD HOSPITALS

691. For each division (except cavalry divisions) there is designated as director of field hospitals one medical officer of the grade of major and there is assigned under him one sergeant and one private first class or private, Hospital Corps, both mounted.

692. The director of field hospitals is, like the director of ambulance companies, immediately under the division surgeon and is the latter's executive in respect to the field hospitals of the division. His supervision over the field hospitals is similar to that exercised by the director of ambulance companies over those companies.

693. He will ordinarily accompany the field hospital in advance on the march and remain with it in camp. He will keep the division surgeon informed of his movements.

694. He should maintain communication with the director of ambulance companies, to enable that officer to make suitable arrangements for the removal of patients from the front, and with the surgeon in charge of the sanitary column from the advance section to promote the rapid evacuation of patients to the rear.

THE FIELD HOSPITAL

(Capacity 216)

695. The field hospitals will be numbered from 1 upward in a single consecutive series for the entire Military Establishment.

696. The wagons of the field hospital will be marked as prescribed in Tables of Organization. (See also par. 545.)

697. The commanding officer of the field hospital is under the immediate orders of the director of field hospitals, when there is one; otherwise he is under the immediate orders of the division surgeon.

698. The personnel of a field hospital at war strength, as given in Tables of Organization, are ordinarily assigned as follows: 1 major (commanding); 5 captains and lieutenants (1 adjutant and quartermaster, 4 ward surgeons); 3 sergeants first class (1 acting first sergeant in general supervision of the hospital and in charge of medical property and records, 1 in charge of transportation and quartermaster property and records, 1 in charge of mess supplies and cooking); 6 sergeants (1 in charge of the dis-

dispensary, 1 in charge of operating equipment, 1 in charge of patients' clothing and effects, 3 in charge of wards); 3 acting cooks; 55 privates first class and privates (46 attendants, 1 dispensary assistant, 1 artificer, 4 orderlies, 3 supernumeraries); and of the Quartermaster Corps, 1 sergeant (wagon master) and 7 privates (drivers).

699. The function of the field hospitals is to keep in touch with the combatant organizations and to provide shelter and such care and treatment as are practicable for the sick and wounded of the division who are brought in by the ambulance companies until the sanitary service of the line of communications takes charge of them. A field hospital can meet these requirements only when it is relieved so promptly by the sanitary units in the rear that its mobility is not interfered with. Prompt evacuation of the sick and wounded is necessary also to secure for them the facilities for treatment and the comforts which are available on the line of communications.

700. On the march and in temporary camps, however, the field hospitals are the nightly collecting points for the divisional sick and injured who are unable to continue the march, and must provide for the care of such patients until they can be turned over to the medical service of the line of communications or to a local hospital or hospitals. (See par. 641.) The use of the field hospitals for this purpose should be carefully regulated by the division surgeon.

(a) So far as practicable in each division only one field hospital at a time will be used in this service, leaving the others entirely free of patients. Furthermore, only so much of the equipment of the field hospital assigned to this work should be unpacked as is required to care properly for the patients actually in the hospital and their necessary attendants who are to remain behind when the division moves on. The number of personnel detailed to remain will be as small as possible.

(b) The equipment which has not been unpacked and the personnel who have not been detailed to remain with the patients will move with the division.

(c) Every effort will be made by the division surgeon to dispose of the patients left behind. Should unusual delay in turning them over to the medical service of the line of communications supervene, temporary provision for them should be arranged in civil hospitals of the locality or otherwise as may be most practicable until the medical units of the line of communications can take charge of them.

(d) As soon as the patients are disposed of, the personnel detailed for the temporary care of such patients will immediately rejoin the hospital.

701. For service in combat, the locations of the field hospitals and the number to be opened will be determined by the division surgeon acting under the instruction of the division commander. The director of field hospitals will supervise their opening, giving the necessary orders therefor to the commanders of the field hospitals. He will report their opening to the division surgeon.

(a) It is desirable that they be centrally located and beyond the zone of conflict, which will usually necessitate placing them 3 or 4 miles in rear of the dressing stations.

(b) Field hospitals should be easily seen and reached from front and rear and yet not be in the way of troops and trains. An ample supply of good water is necessary, and suitable buildings are of great advantage. Such buildings should be utilized first, and only so much tentage put up as may be required.

(c) If the enemy retires, field hospitals will be established, if possible, near the dressing stations having the greatest number of wounded.

(d) A field hospital may be moved forward under the direction of the division surgeon to replace a dressing station and to take over the patients.

702. The time when field hospitals should open will be communicated by the division surgeon to the director of field hospitals, should there be one, or, there being none, to the commanding officers of the hospitals concerned.

(a) Only one will, as a rule, be opened early in the battle. This will be done as soon as the number of wounded justifies it. The other field hospitals should not be set up until the necessity for them is apparent. If the conditions are such that the wounded can be evacuated directly to the line of communications, the opening of field hospitals will be unnecessary.

703. On the receipt of an order to open a field hospital the following departments will be established:

- Dispensary.
- Kitchen.
- Receiving and forwarding.
- Slightly wounded.
- Seriously wounded.
- Operating room.
- Mortuary.

704. All wounded arriving at the field hospital will be received at the receiving and forwarding department, which is the administrative office of the hospital.

(a) The slightly wounded, able to walk, will be immediately directed to the rear or to the station for slightly wounded, as the circumstances may indicate.

(b) The seriously wounded, and the slightly wounded unable to walk, will be assigned to the proper department for treatment.

(c) Records of the wounded will be made as prescribed in paragraph 575 et seq.

705. Under ordinary battle conditions operations at the field hospitals should be such only as are needed to fit the patients for transportation to the rear. Many extensive dressings will, however, be required under all circumstances. All operations should be done under the strictest antiseptic or aseptic precautions, and every effort made to dress cases so that they will not require redressing for some time. Patients should be fed, if practicable, before being sent to the rear.

706. Every opportunity should be taken to transport the wounded to the rear. Ordinarily they will be turned over to the transportation of the line of communications, but the returning transport of the division may be utilized for this purpose in the same manner as at the dressing stations (par. 687).

707. When the number of wounded is very great and the transportation facilities are bad, with no rear hospitals to relieve field hospitals, the latter will, despite all efforts, become crowded with wounded which they can not dispose of. In this case the division surgeon may be compelled to concentrate all wounded in one or two field hospitals so as to free the others for an advance. The hospitals left behind should be cleared as soon as possible, in order that they may rejoin their division.

(a) When no adequate provision is made for the evacuation of the sick and wounded and a field hospital becomes the nucleus around which a camp hospital (par. 604) is developed, it becomes an immobile unit, and, if the troops to which it is attached should move, another field hospital will be required to accompany them.

708. Field hospitals ordered to close or to move will dispose of their patients as directed by the division surgeon.

(a) If by reason of retreat or otherwise a field hospital is required to move before it can evacuate its patients, its commanding officer will take action similar to that prescribed for dressing stations in the like contingency. (See par. 690a.)

709. The opening, moving, and closing of field hospitals will be reported by their commanding officers through the director of field hospitals to the division surgeon, who will report the same when necessary to the surgeon of the advance group of the line of communications.

THE STATION FOR SLIGHTLY WOUNDED

710. The station for slightly wounded is a transient divisional organization on the battle field; it has no permanent personnel or definitely prescribed equipment.

(a) The personnel required for the station, usually one medical officer, two non-commissioned officers, and eight privates, will be detached from such unit of the sanitary train as the division surgeon may elect. In some instances it may be practicable to utilize personnel sent forward from the line of communications.

(b) For the equipment of the station one of the camp infirmaries of the division may be utilized, or a medical and surgical chest and such other supplies as are necessary may be temporarily detached from one of the field hospitals.

711. The functions of the station for slightly wounded are (1) to afford a place where men who are unable to accompany their units into combat may be assembled; (2) to relieve dressing stations and field hospitals of the congestion incident to the presence of the slightly wounded who can walk and who require but little attention.

712. The station, usually one for each division, is established when combat is imminent. It should be about the same distance from the firing line as the field hospitals. A building should be selected for its use when practicable. It should preferably be located on the route over which the troops have advanced, as this route is the one which the disabled are most likely to follow in working their way to the rear. In any case it should be so conspicuously marked that it can be found readily.

713. Extensive preparations at this station are unnecessary. A tent should be erected, if no building is available, where dressings may be applied or readjusted and arrangements made for the preparation of simple nourishment. Diagnosis tags should be attached to all wounded not already tagged. The duplicates of the tags will be disposed of as directed in paragraph 571. A list of sick and wounded will be prepared as prescribed in paragraph 580.

714. As soon as possible wounded at the station who are not able to return to their commands will be collected into groups and directed to the rear in charge of one of their number.

(a) Minor cases requiring no further treatment or only slight treatment will, however, be directed to return to their organizations, and the fact that such directions have been given them will be noted on their diagnosis tags. Men who arrive at the station without authority and are able to do duty will be turned over to the provost guard for return to their organizations.

(b) Should any of the sick or wounded be found too much exhausted or too badly hurt to go farther afoot, the commanding officer of the station will report them to the nearest field hospital.

715. Upon the conclusion of the engagement the personnel and equipment of the station will be disposed of as directed by the division surgeon.

THE ADMINISTRATION OF THE SANITARY SERVICE OF THE DIVISION

716. In administrative matters the division surgeon bears a relation to the units of the sanitary train similar to that of a regimental commander to the battalions and companies of his regiment.

717. In order that the sanitary service may attain its highest efficiency, flexibility in the distribution of sanitary personnel and equipment is essential. The elements comprising the sanitary train are, therefore, not ordinarily *assigned* to units smaller than a division unless the unit is operating independently. They are, however, frequently *attached* to smaller units as, for example, when a division marches by two roads, a part of the sanitary train may accompany each detachment of the division. Under these circumstances the units of the sanitary train are subject to the general control of the senior line officer present with the immediate command which they accompany.

718. When, by divisional orders, units of the sanitary train are temporarily separated from direct headquarters control and placed with line organizations or trains, the senior medical officer present with the units will report them to the line officer in command without further orders and will receive his instructions in such matters as the conduct of the march and the location and security of the units in camp. Units so separated from headquarters are not regarded as detached unless they are specifically ordered to report to the commander of the line troops for duty.

719. The method of control of the sanitary train varies according to circumstances. For example, at a camp where arrangements have been made in advance for an adequate supply of water and forage, an entire division may be assembled, in which case all the elements of the sanitary train will be directly controlled by the division surgeon (par. 651). On the other hand, to facilitate loading on ships, for example, the troops of a division may be concentrated at one port and the trains at another port, in which

case the entire sanitary train is under control of the commander of the divisional train and under the immediate command of the senior medical officer with the sanitary train.

720. When the division is on the march the sanitary train is ordinarily divided. The division surgeon will advise the division commander as to which units of the sanitary train he considers necessary for service with the marching troops and which units may be placed under the commander of the divisional train. When the latter units are released from the divisional train they remain under the immediate command of their senior medical officer until the division surgeon assumes control.

721. On a march not in the immediate presence of the enemy, conditions may warrant placing an entire ambulance company with the advance guard and the distribution of the ambulances of one or more companies through the main body, an ambulance following each regiment or independent battalion. (See pars. 637 and 673.)

722. A field hospital will ordinarily be needed to care for the disabled brought in by the ambulances at the end of the march, and should be placed in the marching column with due regard for this requirement. A field hospital used for this purpose will be promptly evacuated in order that it may proceed with the troops when they advance.

723. In order that the men needing medical attention may be cared for as soon as practicable after camp is established, the camp infirmaries may be distributed through the marching column, one in proximity to each group of organizations which will camp together. When for any reason this is not practicable they will march with the field trains of the units which they are to serve.

724. When combat is imminent, elements of the sanitary train scattered through a marching column may be ordered to fall out, allowing the troops to pass forward. It is essential at this juncture that no sanitary unit hamper the movement of combatant organizations.

725. In combat, the operation of the divisional sanitary units will be governed in general by the character of the engagement, whether defensive, offensive, or retrograde, and in each particular case by the immediate conditions incident to the locality.

726. When the mission of the command is defensive, and particularly if a line of fortifications or some natural barrier, such as a river, can be taken advantage of, it may be practicable to make, in advance, a definite outline of the sanitary service. Under these circumstances the zone within which casualties will probably occur can be determined with sufficient accuracy to enable the division surgeon to make definite recommendations concerning the announcement in the battle order of the location of the station for slightly wounded, the dressing stations, and the field hospitals. As soon as the distribution of the troops on the line of defense is indicated the aid stations may be located and routes from them to the dressing station may be selected. The sanitary service of the line of communications may send forward evacuation ambulance companies and evacuation hospitals, into the zone of the advance in readiness to evacuate the wounded immediately.

727. When the command takes the offensive the difficulties of the sanitary service are greatly increased. The station for slightly wounded is established at once for assembling the sick who are not able to accompany their organizations into battle. As the situation develops the organizations, followed by their sanitary detachments, move forward. Wounded are given first aid, but no aid station is established until the organization has ceased, temporarily at least, to advance, and until the number of wounded in that vicinity justifies it. (See par. 645.) The time and place for the opening of the station is determined by the organization commander, unless he has authorized the surgeon to use his discretion in the matter. Dressing stations are established when required by the number of wounded on any sector of the line. The division surgeon, with the approval of the division commander, gives directions for the opening of the station to the director of ambulance companies. The dressing station, as soon as it arrives at its location, sends forward bearers to establish communication with the aid stations of organizations serving on its sector of the line. (See par. 680.)

728. The wagons of the ambulance companies may be left at field hospitals, in order that the supplies which they carry may be forwarded to the dressing stations by means of the ambulances as they go back and forth. (See par. 685.)

729. All the field hospitals may be held in readiness to establish until definite information can be secured as to the progress of the engagement and the number of casualties, or when conditions warrant it one field hospital may be established as soon as the dressing stations are located (par. 702a). Ordinarily the work of field hospitals will not commence until several hours after the engagement has begun.

730. In a retrograde movement, whenever practicable, transportation and supplies precede the troops. The sanitary service will require some ambulances held as near as possible to the rear guard, which should be accompanied by a liberal allowance of sanitary personnel. So far as practicable the wounded in rear-guard actions should be placed on litters and promptly carried forward to the ambulances.

731. The defensive, offensive, and retrograde movements practically cover the entire field of the activities of the sanitary service in combat. The *rencontre* engagement necessarily develops into one of these three by the time a definite course of procedure for the sanitary service must be determined.

732. Whatever the form of the engagement the division surgeon arranges, as soon as practicable, for the publication in orders of the information necessary for the operation of the sanitary service. In order that divisional orders may not be burdened with details, he recommends for inclusion in these orders only such information as is required by combatant organizations and their attached sanitary personnel, and he issues orders direct to the units of the sanitary train embodying the details of the service which concern these units only.

733. Combatant troops desire to know (1) the location of the aid station for their organization, and (2) the location of the station for slightly wounded. The location of the aid station is published by the organization commander as soon as it has been determined, while the location of the station for slightly wounded should be published in the battle order.

734. It is important that the surgeons of combatant organizations should know as early as practicable the location of the dressing station serving their sector of the line, in order that they may so locate the aid stations as to reduce to the minimum the distance that patients will have to be carried by litter bearers. The surgeons of combatant organizations also require information as to the location of the station for slightly wounded.

735. The divisional battle order usually furnishes information in paragraph 4 as to the location of the station for slightly wounded, and in defensive operations it may announce the locations of dressing stations and possibly of field hospitals, though the latter, as a rule, does not directly concern the combatant troops. When it is impossible to determine in advance of an engagement the locations of the dressing stations, that information is furnished the combatant organizations through military channels as soon as practicable. In any case the surgeons of combatant organizations finally learn the locations of the dressing stations through the litter bearers who are sent forward to the aid stations.

736. In defensive engagements, as indicated above, the division surgeon may recommend that paragraph 4 of the battle order state that a station for slightly wounded is established at a designated point; that dressing stations will be located at designated points to serve certain sectors of the line; for example, one to serve the sector extending from the left flank to a certain road, house, creek, or other landmark indicated on the maps, with which the troops are supplied; another to serve the sector extending from the point above mentioned to the right flank; and, in case conditions warrant such an announcement in advance, that one or more field hospitals will be established at designated places.

737. In offensive movements it may be impracticable to include in the divisional order anything more than the statement of the location of the station for slightly wounded, and, if deemed expedient, some information concerning the places at which ambulance companies and field hospitals will hold themselves in readiness. (See par. 685.)

738. If the locations of the dressing stations and field hospitals have not been announced in the battle order, the division surgeon, with the approval of the division commander and ordinarily after consultation with the directors of field hospitals and ambulance companies, will issue orders concerning the locations of these units and will usually designate by number the field hospital and ambulance company units which are to open at the locations specified. He also transmits such information necessary for the operation of the sanitary units as he may have received from the division commander; e. g., the routes vehicles may take between front and rear.

739. In a retrograde movement a formal order may not be issued. In this case the sanitary units not rendering service with troops will be governed by the general instructions given the commander of trains; those serving the troops will be governed by the orders of the officer in immediate command on whom devolves the responsibility for meeting emergencies as they arise.

740. In service with mounted commands pertaining to an infantry division it is ordinarily impracticable to establish aid stations in combat. The sanitary personnel continue with the organization. When any of them pause to render first aid, they rejoin the command as soon as possible. (See par. 645.)

741. When a cavalry division is operating as a screen, the sanitary service is confronted by many difficulties. The cavalry may be one or more days' march in advance of the infantry divisions and, in a hostile country, may make no effort to continue in control of the territory over which it has passed. The mission of the sanitary service under these conditions will be to render first aid and to transport the wounded as rapidly as possible to the nearest place accessible to the sanitary service of the infantry or of the line of communications. For this reason a cavalry division is provided with a greater number of ambulances in proportion to the divisional strength than an infantry division. In case it is deemed impracticable to take hospital equipment into the area in advance of the infantry divisions a field hospital pertaining to the cavalry division may be established within the line controlled by the foot troops, and under these circumstances the additional ambulance facilities provided will be required to transport the wounded to the field hospital. On the other hand, if conditions warrant advancing the field hospital into the area between the infantry and cavalry, abundant ambulance facilities will be required to transport wounded to the field hospital from the broad front which the cavalry when acting as a screen may occupy. Under these circumstances the use of a portion of the ambulance for transportation of the unmounted Hospital Corps attached to the field hospital may be unavoidable to enable the field hospital to keep in touch with the mounted troops. When opposing armies approach each other cavalry is finally withdrawn from the intervening space and may take position on the flanks of the infantry, in which case the sanitary service is operated as in an infantry division and may be directed by the commander of the field forces to cooperate with the sanitary units of the infantry or of the line of communications.

742. The service of sanitary detachments with organizations of the cavalry division is similar to that of the sanitary troops with the cavalry of an infantry division. When difficulties of communication render it impracticable for the division surgeon to direct personally the sanitary service with the cavalry division, much will necessarily be left to the initiative and judgment of the director of ambulance companies and the senior medical officer with each individual unit.

DUTIES OF THE DIVISION SURGEON

743. The division surgeon is both an advisory and an administrative officer. (See par. 361.) In his advisory capacity he makes recommendations concerning all matters pertaining to the sanitary welfare of the command and concerning matters pertaining to the personnel and equipment of the sanitary service under organization commanders. In his administrative capacity he is in immediate command of the Medical Department personnel attached to division headquarters, of the sanitary train, and of American

National Red Cross units, and other voluntary aid personnel should they be authorized in exceptional cases to perform service with the division.

744. The duties of the division surgeon that may be specifically stated are as follows:

(a) He will take action on all official papers passing through his office in a manner similar to that prescribed for department surgeons (pars. 365 and 368). The channels through which papers pertaining to the Medical Department go forward will be determined by the chief surgeon of the field army according to circumstances. (See par. 828.)

(b) He will render to the chief surgeon, field army, the consolidated daily field report of sanitary personnel and transportation and the consolidated daily field report of patients (Form 84) and the weekly noneffective curve chart (Form 85).

(c) He will see that proper inspections are made of sanitary conditions in the division and of the medical units of the division. These inspections will ordinarily be made by the sanitary inspector.

(d) He will arrange a systematic and orderly service for the care and disposal of the sick and wounded of the division in camps, on the march, and in battle, having in view the retention of effectives at the front and the prompt removal of noneffectives to the rear.

(e) He will keep the surgeon, advance group, advised as to the probable requirements of the sanitary service of the division and as to the number of patients for whom provision will be required on the line of communications.

(f) He will keep the chief surgeon of the field army advised as to the efficiency and requirements of the divisional sanitary service.

(g) On the march the division surgeon ordinarily accompanies the division commander, giving such advice and information regarding the sanitary service as may be called for, and securing all information necessary concerning the disposition of troops to enable him to formulate plans for the sanitary service which these dispositions will require.

(h) When battle is imminent he will utilize all facilities available to familiarize himself with the terrain which will probably be covered and will obtain and distribute to the officers of the sanitary train such information of a general nature as will assist them to determine their course of action.

(i) After an engagement he will immediately report losses in medical personnel to the division commander and will take proper measures to replace the supplies and equipment of the sanitary troops of the division. He will free field hospitals of patients as promptly as possible in order that they may be ready for another engagement or a forward movement.

745. The senior medical officer of a brigade or detachment acting independently will perform for the command such of the duties of a division surgeon as the circumstances may render necessary.

THE DIVISION SANITARY INSPECTOR

746. As an assistant to the division surgeon a medical officer of the rank of lieutenant colonel is assigned to each division for duty as sanitary inspector. He is primarily an advisory officer (par. 362) but may in addition be assigned certain executive duties.

747. A sanitary inspector is charged especially with the supervision of the sanitation of the command to which he is assigned. In this connection he inspects and reports upon the sanitary conditions within the command, upon the occurrence of preventable diseases and the sufficiency of the measures taken for their prevention, and in general upon all matters affecting the sanitary care of troops.

(a) At the end of every month each sanitary inspector will forward to the Surgeon General, through military channels, a report of the inspections made by him during the month under the provisions of this paragraph, indicating the sanitary defects, if any, observed and the measures taken for their prevention. This report will be made on Form 50, modified if necessary to suit the case.

748. Sanitary inspectors also inspect and report upon the administration of the units of the sanitary train; the efficiency, instruction, and adequacy of the medical personnel;

the condition of hospitals; the character and sufficiency of medical supplies; the facilities for transporting medical supplies and the sick and wounded; and in general all matters affecting the care, well-being, and comfort of the sick and wounded.

(a) A report of each formal inspection made under the provisions of this paragraph will be made on Form 50b, and will be forwarded within five days after the inspection is made through military channels to the Surgeon General. A duplicate will be filed in the office of the division surgeon. Should this report indicate any irregularities or defects of medical administration, the sanitary inspector will furnish a triplicate through military channels to the medical officer commanding the Medical Department organization concerned, who will, without delay, report by indorsement thereon what remedies he has applied or will apply to correct each of the irregularities or defects noted. Such reports so indorsed will also be forwarded through military channels to the Surgeon General.

749. Organization commanders are usually required by divisional orders to remedy sanitary defects reported to them by the sanitary inspector. To facilitate the attainment of satisfactory sanitary conditions the sanitary inspector may be authorized by the division commander to direct, in the name of the latter and within such limitations as he may prescribe, the prompt correction of conditions prejudicial to the health of the troops.

750. For the purpose of supervising or executing sanitary measures in divisional camps of more or less duration, sanitary squads may be organized and placed under the control of the sanitary inspector. (See pars. 774 to 777.)

(a) Manure and refuse dumps used by the division in common, the water supply, measures for the prevention of mosquitoes and flies, the policing of areas outside the jurisdiction of organization commanders, etc., may be placed in charge of such squads.

(b) In the employment of sanitary squads in divisional camps the provisions of paragraph 777 will be strictly complied with.

ARTICLE XIV.—THE LINE OF COMMUNICATIONS

GENERAL

751. The line of communications is the connecting link between the service of the interior and the zone of the advance. It is established when an important force is about to engage in field operations involving a movement from a base unless the territory through which the supply services extend can be safely occupied without military operations of an extensive character. In the latter case administration and supply are accomplished as in the service of the interior.

752. The point at which the base of a line of communications is to be established is fixed in War Department orders. The zone of the line of communications embraces all territory from and including the base to the point or points where contact is made with the trains of the combatant forces. Certain of its activities, including those of the sanitary service in evacuating the wounded, extend forward into the zone of the advance when necessary.

753. The line of communications is ordinarily divided into a base section and an advance section. In certain cases, due to prolongation of the line of communications, an intermediate section may be required. An advance section is required at the head of each important route of supply diverging from the base.

754. The mission of the sanitary service of the line of communications is (1) to provide such adequate facilities for the treatment of the sick and wounded that those not permanently disabled may be returned to the front with the least practicable delay; (2) to furnish such an efficient evacuation service as will promptly relieve the fighting forces of the encumbrance of their sick and wounded and allow the sanitary units in the zone of the advance to maintain contact with their combatant organizations; (3) to organize and maintain a system of supply that will enable the sanitary troops in the theater of operations to replenish their equipment and supplies by direct methods and

without delay; (4) to maintain satisfactory sanitary conditions among the troops on the line of communications and, if necessary, to take entire charge of sanitation among the inhabitants of the occupied territory.

755. When the military conditions in occupied territory are such as to impair the usual agencies of medical relief among the inhabitants thereof, the Medical Department may take such measures, not incompatible with the necessities of the occupying forces, as may be necessary to relieve the distress and suffering of the sick.

756. The Medical Department units pertaining to the line of communications are the following:

Base group.—A medical supply depot, one or more base hospitals, and when required, convalescent camps, contagious disease hospitals, hospital trains and trains for patients, hospital ships and ships for patients, casual camps, sanitary squads, field laboratories, and organizations of the American National Red Cross.

Intermediate group.—Rest stations, organizations of the American National Red Cross, and such other sanitary formations as may be necessary.

Advance group.—Two evacuation hospitals and one evacuation ambulance company for each division at the front supplied from the advance section, and an advance medical supply depot. The evacuation hospitals and evacuation ambulance companies of the advance section are collectively known as the sanitary column.

THE BASE HOSPITAL

(Capacity 500)

757. Base hospitals are Medical Department units of the line of communications under the supervision of the surgeon, base group. They will occupy buildings if suitable ones are available.

758. The base hospitals will be numbered from 1 upward in a single consecutive series for the entire Military Establishment. They will be further distinguished by adding the designation of the field army to which they belong, as "Base Hospital No. 9, 3d Field Army."

759. These hospitals should be established at the base and, when necessary, in accessible situations along the line of communications. The number to be assigned to each line of communications when first established is determined on the basis of the number of troops to be served and the percentage of sick and wounded which may reasonably be anticipated in the particular campaign in question. (See par. 152.)

(a) New base hospitals may be established when those already in operation have become too far separated from the Army, when they are needed to supplement the services of more advanced hospitals, or when new sites will be more convenient to handle wounded.

(b) On the eve of battle it may be necessary for the surgeon, base group, to open additional base hospitals near the front or to augment the personnel and supplies of those already established there.

760. The personnel allowed a base hospital, as given in Tables of Organization, are ordinarily assigned as follows: 20 medical officers, 1 colonel (commanding), 1 major (operating surgeon), 18 captains and lieutenants (1 adjutant, 1 quartermaster, 1 pathologist, 1 eye, ear, nose, and throat specialist, 2 assistant operating surgeons, 12 ward surgeons); 1 dental surgeon; 8 sergeants first class (1 general supervision, 1 in charge of office, 1 in charge of quartermaster supplies and records, 1 in charge of kitchen and mess, 1 in charge of detachment and detachment accounts, 1 in charge of patients' clothing and effects, 1 in charge of medical property and records, 1 in charge of dispensary); 16 sergeants (1 in dispensary, 2 in storerooms, 1 in mess and kitchen, 4 in office, 2 in charge of police, 6 in charge of wards); 14 acting cooks; 115 privates first class and privates (68 ward attendants, 3 in dispensary, 5 in operating room, 1 in laboratory, 14 in kitchen and mess, 6 in storerooms, 4 orderlies, 5 in office, 4 outside police, 1 assistant to dentist, 4 supernumeraries); 46 nurses, female¹ (1 chief nurse, 1 assistant to chief nurse, 41 in wards, 2 in operating room, 1 dietist).

¹ When female nurses are not available, additional enlisted men will be assigned in their stead.

761. So far as adaptable the regulations for general hospitals will govern the interior administration of base hospitals. (See pars. 283 to 316.)

762. The base hospitals are designed to receive patients from the field and evacuation hospitals, as well as cases originating on the line of communications, and to give them definitive treatment. They should be well equipped for such treatment and there should be sent to the home territory only those patients who require special treatment or whose condition is such that they may be regarded as either permanently disabled or likely not to recover within a reasonable time. If, however, the number of new cases from the front is taxing the base hospitals beyond their capacity or the facilities thereof are inadequate from any cause to meet the demands upon them, more extensive evacuation of patients must be effected. On the eve of battle the base hospitals near the front should be cleared as far as possible to make room for new patients.

763. Unless otherwise provided, the personnel, supplies, and equipment for the evacuation of patients from advanced base hospitals to the rear will come from the hospitals receiving them.

764. The commanding officer of the hospital will indicate under "Remarks" in his daily report made on Form 83, the number of patients who require transfer so that arrangements may be made accordingly. He should himself supervise the selection of patients for further transfer in order to keep down to the lowest possible figure the number of men lost to the Army.

765. Base hospitals ordered to close will dispose of their patients as directed by the surgeon, base group.

THE CONVALESCENT CAMP

766. In appropriate cases convalescent camps may be established in the vicinity of base hospitals. Such camps will be branches of the base hospital near which they are situated.

THE CONTAGIOUS DISEASE HOSPITAL

767. Ordinarily cases of infectious disease occurring among troops in the theater of operations will be cared for in the isolation wards of base or other hospitals and so far as practicable at or near the place of origin of the disease. In the presence of a serious epidemic, however, special facilities for the isolation of cases may be required. In this event the surgeon, base group, with the authority of the commander of the line of communications, will organize such contagious disease hospitals as may be necessary to meet the emergency.

768. No definite organization for these hospitals can be prescribed in advance of their establishment. The personnel for their operation will be procured from the home territory or provided from the line of communications, as circumstances may warrant.

TRAINS, BOATS, AND SHIPS

769. The general regulations governing the organization, personnel, matériel, and operation of hospital trains, trains for patients, hospital ships, and ships for patients in the service of the interior will apply also to the similar Medical Department units on the line of communications, except that the duties performed by the Surgeon General with respect to the former will devolve in the latter case upon the surgeon, base group. (See pars. 613 and 619.)

770. As hospital trains are permanent Medical Department units, when their organization on the line of communications is necessary, timely measures to procure the prescribed personnel therefor from home territory should be instituted. Pending the arrival of such personnel the medical officers and Hospital Corps men needed to operate these trains should temporarily be drawn from other Medical Department units on the line, exclusive of the evacuation hospitals and evacuation ambulance companies, whose personnel should under no ordinary circumstances be diminished.

(a) When it is necessary to organize trains for patients they may also obtain their medical personnel temporarily from other units on the line of communications, exclusive of the evacuation hospitals and evacuation ambulance companies, but permanent details from the service of the interior should be requested for their continued operation.

771. General arrangements for the running of hospital trains and trains for patients will be made by the surgeon, base group, with the officer in charge of the base. Details in regard to the loading and unloading of patients at railway stations will be arranged between the officers in charge of such stations and the commanding officers of the evacuation ambulance companies or hospitals which are to transfer or receive the patients.

772. Circumstances will rarely be such that hospital ships will be available on the line of communications. But navigable streams will often offer opportunities for the more comfortable and expeditious transportation of the sick and injured than can be had by land, and the surgeon, base group, should in such event avail himself thereof by organizing the necessary boat service. The personnel and supplies for such service will be drawn from the line of communications as in the case of trains for patients.

CASUAL CAMPS FOR SANITARY TROOPS

773. These camps are designed for the reception, shelter, and control of Medical Department personnel on their arrival and during their stay at the base pending assignment. They will, with the approval of the commanding officer of the line of communications, be established by the surgeon, base group, at or near the base. They will be under the immediate command in each case of the senior medical officer on duty therein, and their administration will be governed by general military principles.

SANITARY SQUADS

774. For the purpose of giving attention to sanitary matters not within the control of regimental or other military organizations, sanitary squads will be organized on the line of communications at such places as may be necessary.

775. The personnel of such squads will consist of enlisted men of the Hospital Corps augmented by such number of other enlisted men and civilian laborers as the amount and character of the work may justify. Each squad will be in immediate charge of a medical officer.

776. The function of sanitary squads is to supervise or execute, as the case may be: (1) The necessary measures for the sanitation of camp sites, towns or villages not occupied or garrisoned, or of such parts of the same as may be otherwise unprovided for; (2) sanitary work that may be necessary for the general welfare but that can not be performed conveniently or profitably by individual organizations; (3) the operation of sanitary apparatus used by troops in common and not under control of any one organization.

777. Sanitary squads will not be employed to relieve regimental and other similar organizations of the duty of providing for the sanitation of their own camps.

FIELD LABORATORIES

778. One or more field laboratories will be established on the line of communications where most convenient for the work to be accomplished. A suitable building should be chosen in each case, preferably in a town provided with water and gas supply.

779. The technical supplies for a field laboratory are listed in paragraph 896. Such additional equipment will be supplied as the surgeon, base group, may deem necessary.

REST STATIONS

780. Rest stations are organized for the purpose of giving temporary care and treatment to sick and wounded en route. When on railway lines those established on the line of communications are similar in every way to those pertaining to the service of the

interior and their personnel should, if practicable, be obtained in like manner. (See par. 618.)

781. In exceptional cases the distance between the hospitals in the zone of the advance and the advance section of the line of communications may be so great that it will be necessary to establish rest stations on the route of the evacuation ambulance companies. Under these circumstances the rest stations will usually be of a temporary character and their personnel and supplies will be provided by the evacuation ambulance companies. At such stations provision should be made for temporary but comfortable shelter, nourishing food, and readjustment of dressings or other treatment necessary to enable the patients to proceed comfortably to their destination.

THE BASE MEDICAL SUPPLY DEPOT

782. A medical supply depot will be established at the base. The officer in charge of this depot will prepare in quadruplicate a list of all supplies required, showing the maximum and minimum quantities of each article which should be kept on hand in the depot, having due regard in formulating this estimate to the number of troops to be supplied, the time required by the depot to replenish supplies, the character of the military operations in prospect, etc. In stating the minimum quantity of supplies the supply officer should include at least one medical reserve unit (par. 891) for each division at the front, in addition to the supplies likely to be required by the sanitary formations on the line of communications. Three copies of the above-mentioned list will be forwarded through military channels to the commander of the military forces. When approved, one copy will be retained at the headquarters of the commander of the field forces, one copy will be sent to the Surgeon General, and one copy will be returned to the officer in charge of the depot.

(a) When the supply on hand of any article exceeds or falls below the specified maximum or minimum, the fact will be reported in writing to the commander of the line of communications and to the senior medical officer on the staff of the commander of the field forces, with appropriate explanatory remarks.

783. Stock to replace issues from these depots will be maintained without formal requisition. (See F. S. R.: *Zone of the Advance, General*.) When such replenishment is desired single copies of the invoices on which supplies were issued, stamped "Replenishment requested," will be forwarded direct to the designated source of supply. Any articles shown on an invoice for which replenishment is not desired will be erased therefrom before the invoice is stamped and forwarded. Invoices stamped and forwarded as above described will be acted upon as if they were approved requisitions.

784. Requisitions from the depot for other than the replenishment of issues, if within the limits of the maximum and minimum table, will be forwarded in duplicate to the surgeon, base group. He will modify them at his discretion, forward one copy to the issuing depot in the home territory, and return the other copy to the base depot with his modifications, if any, noted thereon.

785. Requisitions for supplies not provided for in the maximum and minimum table require the approval of the Surgeon General.

786. In emergencies the surgeon, base group, may authorize local purchases to supply the immediate needs of the depots on the line of communications. (See par. 819g.)

THE ADVANCE MEDICAL SUPPLY DEPOT

787. The stock on hand at this depot will be considered a part of the available supply of the base depot, as far as the table fixing the maximum and minimum stock limits is concerned.

788. Maximum and minimum limits of stock to be maintained at this depot will be determined by the commander of the line of communications on recommendation of the surgeon, base group, to whom any variation of stock above or below the prescribed limits will be reported at once with appropriate explanatory remarks. In making his recommenda-

tions the surgeon, base group, should include in the minimum quantity of supplies to be maintained at this depot at least one medical reserve unit (par. 891).

789. Issues from the advance depot will be replenished from the base depot without formal requisition, in the manner provided under base supply depots (par. 783).

790. Requisitions from the advance depot for supplies other than those required to replace issues will be forwarded in duplicate to the surgeon, base group. He will modify them at his discretion, send one copy to the base supply depot for issue, and return the other copy to the writer with his modifications, if any, noted thereon.

791. The advance depot is intended as a source of supply for troops in the zone of the advance, and it should not, except in emergency, be depleted by issues to evacuation hospitals, evacuation ambulance companies, and other units on the line of communications.

792. The operations of this depot will necessarily be controlled by the military situation in the zone of the advance. If the troops are occupying defensive positions with little probability of an immediate advance, the depot may be established in buildings, if they are available, or under canvas; if they are advancing, the depot may be maintained on barges, in box cars, or on motor trucks. In the latter case the prescribed stock of supplies may temporarily have to be reduced to such essentials as surgical dressings, medicines, and other articles of that class. In determining the character of the articles that may be eliminated under these circumstances much will depend upon the facility with which supplies can be obtained from the base.

THE EVACUATION HOSPITAL

(Capacity 432)

793. The evacuation hospitals are Medical Department units belonging to the line of communications. Ordinarily two evacuation hospitals will be assigned to a line of communications for each division which it serves in the zone of the advance. They will be numbered and designated like the base hospitals (par. 758).

794. The personnel of an evacuation hospital at war strength, as given in Tables of Organization, are ordinarily distributed as follows: 16 medical officers, 1 lieutenant colonel (commanding), 1 major (operating surgeon), 14 captains and lieutenants (1 adjutant, 1 quartermaster, 2 assistant operating surgeons, 10 ward surgeons); 8 sergeants first class (1 in general supervision, 1 in charge of office, 1 in charge of quartermaster supplies and records, 1 in charge of kitchen and mess, 1 in charge of detachment and detachment accounts, 1 in charge of patients' clothing and effects, 1 in charge of medical property and records, 1 in charge of dispensary); 20 sergeants (1 in dispensary, 2 in storerooms, 1 in mess and kitchen, 4 in office, 1 in charge of police, 10 in charge of ward, 1 in operating room); 10 acting cooks; 141 privates first class and privates (98 ward attendants, 3 in dispensary, 5 in operating room, 10 in kitchen and mess, 4 in storerooms, 4 orderlies, 5 in office, 6 outside police, 6 supernumeraries).

795. The primary function of the evacuation hospital is to replace field hospitals so that the latter may move with their divisions, or to take over their patients with the same object in view. So far as it would not interfere with this function the evacuation hospital may be used for ordinary hospital purposes on the line of communications.

796. An evacuation hospital is preferably established on a railway or navigable stream, but this preference must, of course, yield to the military situation. Care should be taken to choose a site accessible to wheeled transport and with an abundant supply of water and fuel. When suitable buildings are available they will be utilized.

797. The places where evacuation hospitals are to be established or to which they are to be moved will be determined by the surgeon, advance group, under the authority of his commanding officer.

798. Before a battle all evacuation hospitals will be brought as far forward as possible and will remain in readiness for opening or further advance.

799. The duties of an evacuation hospital when opened are similar to those of a field hospital in combat (par. 701) and corresponding departments will be created (par. 703).

800. The character of the surgical treatment to be given to wounded therein will vary widely under different conditions. When during battle many wounded are being received the treatment afforded will hardly be more extensive than that at field hospitals, viz. emergency operations and better preparation for transport. When few wounded are coming in and there is no probability of an early move, complete treatment may be given even during battle.

801. Serious cases requiring protracted treatment and all patients permanently incapacitated should be sent to the rear from evacuation hospitals as soon as their condition permits.

(a) When battle is expected active measures of evacuation should be employed to clear the evacuation hospitals in use so that they may be ready for movement toward the front.

(b) During battle all patients in evacuation hospitals who are fit for transportation should be hurried to the rear as soon as possible to make room for new cases from the front. It will rarely be possible for evacuation hospitals to send slightly wounded back to their organizations during combat, but every opportunity should be taken to do so in order that such wounded shall not become further separated from their commands.

802. The necessary transportation for moving patients to the rear from evacuation hospitals will be provided by direction of the commanding officer of the advance section of the line of communications.

803. The commanding officer of the evacuation hospital will indicate, under "Remarks" in his daily report made on Form 83, the number of patients who require transportation to the rear.

THE EVACUATION AMBULANCE COMPANY

804. Evacuation ambulance companies are organized only in time of war or when war is imminent. They are allowed in the proportion of one for each division at the front. They will be numbered consecutively from 1 upward for each field army to which they belong, as "Evacuation Ambulance Company No. 1, 3rd Field Army."

805. The commanding officer of the company is under the immediate orders of the surgeon, advance group.

806. The allowance of personnel and equipment for an evacuation ambulance company will be that provided for an ambulance company with such modifications as the conditions under which the former is serving may warrant. Motor ambulances should, if practicable, be substituted for horse-drawn vehicles. Ordinarily pack mules will not be required and, owing to the fact that the company normally operates from the head of the line of communications where there is a supply depot, the quantity of reserve surgical dressings provided for the ambulance company may be largely reduced.

807. The primary function of the evacuation ambulance company is the evacuation of field hospitals and the transportation and care of patients en route therefrom to evacuation, base, or other hospitals on the line of communications or to points with train or boat connections for rail or water transport to such hospitals.

808. On the march the company will be brought up to clear field hospitals of patients collected by the latter (par. 700), and to take them to points on the line of communications.

809. When battle is soon to occur it will usually be necessary to greatly increase the number of vehicles and bearers of the company. This increase will be provided by the officers in charge of the advance section on the recommendation of the surgeon, advance group.

810. Just before a battle commences all evacuation ambulance companies should be located as far in advance as the conditions permit.

811. At the proper time or times during or after the battle each company, under instructions given therefor by the surgeon, advance group, will proceed to the field hospitals which it is to evacuate, will report to the commanding officers thereof, will receive

the patients who are to go to the rear, and in due course will deliver them to the Medical Department organization which is designated for their further care.

(a) The evacuation ambulance company will receive and provide for all patients turned over to it by a field hospital. (See also par. 706.)

(b) It will also receive and provide for the slightly wounded, able to walk, who report to it by proper authority from the dressing stations, the station for slightly wounded, or other places on the field.

812. The assignment of the sick and wounded to the various kinds of transport (automobiles, ambulances, wagons, country carts, bearers, etc.) will be made by the commanding officer of the company according to their condition. In doubtful cases the authorities of the hospital should be called upon for necessary information.

ADMINISTRATION

813. For administration and control the line of communications is organized as follows:

- (1) A service of defense.
- (2) A supply, sanitary, and telegraph service.
- (3) A service of military railways.

814. The commander of the line of communications is responsible, under existing regulations, for the defense of the zone and for the government of that portion of the zone placed under military control. All troops, military establishments, and personnel in the zone of the line of communications are under his control. He is responsible that the reserve of supplies on hand in his various depots shall be maintained between the maximum and minimum amounts fixed by the commander of the field forces.

815. All personnel pertaining to the sanitary service of the line of communications report at the base for assignment to duty. Here advance and intermediate sections are organized and sent forward as required.

816. Base, intermediate, and advance sections are each commanded directly by the commander of the line of communications through an assistant chief of staff authorized to issue orders in his name.

817. The senior medical officer assigned to duty at the base section of the line of communications (surgeon, base group) acts in a dual capacity. (1) He is the technical adviser of the commander of the line of communications on all matters relating to the operation of the Medical Department within the zone of the line of communications. In this capacity he transacts his business directly with the headquarters of the line of communications. (2) He acts in an executive capacity, controlling directly all Medical Department establishments pertaining to the base. In this relation all communications between the surgeon, base group, and the commander of the line of communications pass through the officer in charge of the base.

818. As adviser to the commander of the line of communications the duties of the surgeon, base group, and the relation he bears to the medical personnel in the zone of the line of communications, are analogous to those of a department surgeon, and he will be governed by the regulations for the latter (see pars. 364 to 370) with such modifications as the different conditions demand. To the extent of his authority the surgeon, base group, is responsible for the efficiency of the entire medical service of the line of communications, and for the accomplishment by such service of its mission as outlined in paragraph 754.

819. The duties of the surgeon, base group, that may be specifically stated are as follows:

(a) He will direct and control personnel of the American National Red Cross on duty with the line of communications.

(b) He will decide whether personal service individually volunteered shall be accepted (par. 537); and, when accepted, he will direct how it shall be employed.

(c) He will devise appropriate measures for the shelter, supply, treatment, and transport of the sick and wounded, including suitable provisions to secure the retention

of effectives at the front and for the sending of noneffectives to the rear; and will consult with the chief of staff and the heads of other staff departments in reference to the details of such measures.

(d) He will coordinate the Medical Department administration of the line of communications, and to that end will keep continuously in touch with the surgeons of advance and intermediate groups.

(e) He will communicate with the Surgeon General regarding medical arrangements for the movement of patients from the base to home territory and the provision of Medical Department personnel and supplies from the home territory for the line of communications.

(f) He will act on requisitions for Medical Department supplies as provided in paragraph 552.

(g) With the approval of the Surgeon General he may give authority for the purchase in local markets of medical supplies immediately necessary for the care of the sick and wounded and the prevention of the spread of disease.

(h) With the approval of the Surgeon General he may receive voluntary contributions in money or kind for the benefit of the sick and wounded and he may expend the same as he deems fit.

(i) With the approval of the Surgeon General he may make contracts with surgeons and employ or authorize the employment of other civilians for emergency service under the Medical Department on the line of communications.

(j) When battle is impending he will take such steps as are necessary to insure that mobile units of the line of communications are free to advance when required; that hospitals are cleared for new cases; that sufficient medical supplies are collected in the immediate rear of the army to meet the exigencies of combat; and that personnel available for assistance in the zone of the advance are assembled and held in readiness as far forward as practicable.

(k) He will make timely recommendations to the commander of the line of communications regarding transportation required for medical supplies and for patients.

(l) He will render to the chief surgeon of the field army the consolidated daily field report of sanitary personnel and transportation and the consolidated daily field report of patients (Form 84) and the weekly noneffective curve chart (Form 85).

820. The relations of the senior medical officer assigned to duty with the advance section (surgeon, advance group) and of the senior medical officer of any intermediate section that may be established, to the surgeon, base group, are similar to those of post surgeons to department surgeons.

821. The surgeon, advance group, under the supervision of the officer in charge of the advance section, controls directly all sanitary units at the head of the line of communications.

822. The surgeon, advance group, has general charge of the transportation of patients from the field hospitals or other units in the zone of the advance to the evacuation hospitals or other places on the line of communications prepared for their reception.

823. During or after battles of any magnitude the transportation included in the sanitary column will usually be found greatly inadequate for the evacuation of the wounded. It will be the duty of the surgeon, advance group, to anticipate these conditions and to make timely provision for obtaining the increased transportation necessary. Under competent authority, vehicles belonging to the civilian population may be impressed, and use made of the supply column of the advance section. He should direct the operation of such additional transportation until the emergency is past.

824. Under all circumstances the surgeon, advance group, should maintain close touch with the division surgeons and medical organizations at the front and make suitable arrangements to relieve them promptly of the sick and wounded left behind.

825. When battle is impending, he will clear his evacuation hospitals as far as necessary, so that room may be available for wounded from the front; he will assemble near the front his evacuation ambulance companies and one or more evacuation hospitals, and

he will advance supplies to points where they may be readily available for the divisional units.

826. One of the most important duties which devolve upon all medical officers in the zone of the line of communications is careful exercise of judgment in making recommendations regarding the transfer of the sick and wounded to the home territory in order that hospitals on the line of communications may not be burdened with patients who are permanently disabled and that soldiers who are likely to be able to rejoin their commands within a reasonable time be not sent too far to the rear.

827. The duties of sanitary inspectors assigned to the service of the line of communications are analogous to those of department sanitary inspectors, and they will be governed by the regulations for the latter (pars. 371 to 374) with such modifications as the different conditions demand.

ARTICLE XV.—ADMINISTRATION OF THE SANITARY SERVICE OF THE THEATER OF OPERATIONS

THE CHIEF SURGEON OF A FIELD ARMY

828. The chief surgeon of a field army belongs to the technical and administrative group of the staff of the commander. During the period of grand tactical operations when a line of communications is in operation the chief surgeon is, in general, an advisory officer, administering directly only the limited personnel of the Medical Department attached to headquarters. In his advisory capacity he concerns himself only with the broad principles underlying sanitary administration. His recommendations are such that, when promulgated by the commander, the details of the sanitary service will be left to subordinate commanders. Under these conditions the chief surgeon maintains no office of record. He may, however, direct that all or any of the Medical Department reports from the zone of the advance pass through the office of the surgeon, base group, before being forwarded to the War Department, in order that the information contained therein may be tabulated for his use or that the reports may be returned for correction.

829. Upon the completion of the grand tactical operations and upon the discontinuance of an organized line of communications, or if no line of communications has been organized, he assumes a more direct control of such Medical Department personnel, depots, hospitals, etc., as the War Department may place under the command of the officer upon whose staff he is serving. Under these circumstances the chief surgeon will maintain an office of record in so far as he is assigned the duties which devolve upon the surgeon, base group, when a line of communications is operated.

830. The duties of the chief surgeon include those outlined in paragraph 362. He is specifically charged with the following:

(a) He will keep the Surgeon General advised of the condition and efficiency of the sanitary service of the command.

(b) He will take the necessary steps to insure coordination of the sanitary service of the zone of the advance and the zone of the line of communications, and to that end will keep continually in touch with the division surgeons and the surgeon, base group.

(c) He will make recommendations relative to the adequacy of the table of maximum and minimum supplies to be maintained in the depots on the line of communications. (See par. 782.)

ARTICLE XVI.—RÉSUMÉ OF THE OPERATIONS OF THE SANITARY SERVICE IN WAR

831. When war is imminent, the Regular Army is mobilized at its permanent posts or stations and the Organized Militia at mobilization camps. Little is required of the Medical Department at the time of mobilization in connection with the preparation of organizations of the Regular Army for active service. Field equipment is maintained

at designated stations or depots in readiness for service at all times; the men of the Hospital Corps available for service with line organizations and with the sanitary train are designated in time of peace and are in readiness to join their respective units. The men composing the line organizations have been given thorough physical examinations which have been made of record, and they have been vaccinated against smallpox and typhoid fever. Each man is equipped with a first-aid packet and has been instructed in its use. So far as the Medical Department is concerned, therefore, these troops should be in readiness to proceed from their points of mobilization to the camps of concentration on short notice.

832. Mobilization camps for the Organized Militia are provided in each State. An officer of the Regular Army commands each camp and has on his staff a camp surgeon, usually a medical officer of the Regular Army. Mobilization camps are operated under the control of department commanders, who are responsible for the complete preparation and equipment of the troops which assemble there. The work of the Medical Department at these camps is supervised by the department surgeon and the sanitary inspector of the department. The camp surgeon is provided with an adequate corps of assistants. Physical examinations of troops mobilized are made and recorded in accordance with specific instructions from the War Department. Vaccinations against smallpox and typhoid fever are administered and records made thereof. Individuals and organizations are furnished such portions of their equipment as pertain to the Medical Department; and such training in sanitary matters is given both the line troops and the sanitary troops as is possible, and appropriate to each (par. 594). When for any reason it is impracticable to fully prepare individuals and organizations for service at the front, so far as this preparation devolves upon the Medical Department, the camp surgeon will furnish a full report to the department surgeon showing what remains to be done in order that the latter may take the necessary steps to have the preparation of such individuals and organizations completed at the camp of concentration.

833. After mobilization, equipment, and preliminary training, the troops are assembled at concentration camps for immediate use against the enemy or for transport to an overseas theater of operations. At camps of concentration the general instruction and training of the line and sanitary troops in connection with the work of the sanitary service is conducted under the direction of the camp surgeon.

834. On leaving camps of concentration, troops pass from the service of the interior to the theater of operations, where they come under the control of the commander of the field forces. They may pass directly into the zone of the advance or they may traverse the zone of the line of communications before reaching the zone of the advance, or they may be assigned to duty on the line of communications. In the latter case they may be assigned either to the service of defense, to the supply, sanitary and telegraph service, or to the service of military railways. The relations and duties of the sanitary personnel in this zone are described in paragraphs 751 to 827.

835. The sanitary service of the zone of the advance is treated in detail in paragraphs 630 to 750. The purpose of the service in camp, on the march, and in combat is to render temporary aid to the sick and wounded and to expedite their transportation to the rear, always making such disposition as will secure the retention at the front of all men fit for duty and relieve the fighting force of the impediment incident to the presence of men incapacitated for duty. To that end the service of the advance is assisted by the service of the line of communications, if one has been organized; otherwise, directly by the service of the interior. In either event it cooperates with the advance station of the service in its immediate rear. When battle is imminent, the resources of the sanitary service behind the zone of the advance are placed in readiness to meet the demands for the care and transportation of the wounded which may reasonably be expected, and personnel and supplies are advanced as near the seat of operations as practicable, reaching forward into the zone of the advance if conditions warrant it.

836. The troops engaged in combat are accompanied by medical officers and Hospital Corps attendants; ordinarily a medical officer with a detachment of Hospital Corps men accompanies each battalion into combat, and the surgeon of each regiment with the equip-

ment carried on a pack mule (par. 866) establishes an aid station. The wounded apply their own first-aid dressings, if practicable, and the sanitary personnel attached to organizations render first aid as soon as possible. The sanitary personnel with each battalion collect the wounded in groups and transport those who are unable to walk to the regimental aid station. Men with trivial wounds are sent back to their commands when their wounds are dressed, and those slightly wounded but able to walk are directed to the station for slightly wounded several miles in the rear, in order that dressing stations and field hospitals may not be unnecessarily congested by the presence of this class of men.

837. At the aid stations the sanitary service with troops connects with the service of the sanitary train. Each ambulance company establishes a dressing station in a protected location, usually some distance in rear of the aid station. The dressing stations send forward bearers to remove the wounded who have been brought in to the aid stations. At the dressing stations light nourishment is provided, dressings are examined and adjusted or reapplied, as conditions may require, and the patients who require transportation are made as comfortable as possible until it is practicable to transport them to the rear, usually to the field hospitals. Whenever possible the dressing stations are so located that they can be reached by wheel transportation, and the wounded are sent to the field hospitals in ambulances.

838. The field hospitals do not perform the functions of civil hospitals or of base or general hospitals, in that their equipment is limited to those things necessary to provide shelter, nourishment, and emergency treatment for patients until they can be transferred to the immobile units at the rear. At the field hospitals no beds or cots are provided. The patients are placed on straw over which blankets are spread. The service of the zone of the advance controlled by the division surgeon terminates with the field hospitals. The units of the line of communications pushed forward into the zone of the advance (par. 825) relieve the field hospitals of their sick and wounded as rapidly as possible.

839. One of the evacuation hospitals held in readiness at the head of the line of communications will ordinarily receive the patients from the field hospitals. In some cases an evacuation hospital is pushed forward and takes charge of the patients at the location of the field hospital; in other cases transportation from the advance section of the line of communications is sent forward to the field hospital to receive the patients, and in many cases the wagons going to the rear for supplies will transport the patients back to the refilling point where they will be turned over to the wagons sent forward from the advance section. The evacuation hospital is the first sanitary unit in which provision is made to retain patients for any length of time. It is equipped with cots, blankets, and a liberal supply of comforts for the sick, but ordinarily the evacuation hospitals will be cleared of patients as early as practicable in order that they may be ready to receive others from the front. The patients are usually sent back by trains or boats to the base hospitals where all possible comforts and facilities for their care are provided. All sick and wounded who will be able to return to duty within a reasonable time will be retained in these hospitals rather than turned over to the service of the interior. Patients who no longer need medical attention are placed in convenient camps operated in connection with the base hospitals until they regain sufficient strength to return to their commands. The base is the great center of medical activity of an army. Personnel and supplies intended for the Army are accumulated here and sent forward as required. The sick and wounded are sent back to the base and cared for. Records of both supplies and personnel are kept at the base, and such abstracts and tabulations as the chief surgeon of the field army may require from time to time are made here and supplied to him.

840. The losses at the front are being constantly replaced by men sent forward through the channels above described. New recruits are sent to the mobilization camps where they are equipped and drilled and pushed forward to meet the demands in the zone of the advance.

841. Supplies furnished by the Medical Department for troops at the front are ordinarily obtained from the supply depot at the head of the line of communications on requisitions approved by the division surgeon. Each sanitary formation may make its

own requisition, and its supplies may be sent forward from the advance section to the refilling points where the transportation furnished by the line of communications turns over the supplies to the transportation sent back from the divisional organizations. The stream of supplies coming forward, consisting of rations, clothing, and ammunitions, is constant, and ample opportunity is afforded to bring up the articles required by the sanitary service with the other supplies. When found to be more convenient the regimental sanitary supplies may be replenished from camp infirmaries or from the supplies carried by ambulance companies, these latter making requisitions for the supplies which they require. The supply depot at the advance section draws its supplies from the depot at the base, the stock of which is automatically maintained by the service of the interior.

TABLES OF ORGANIZATION, U. S. ARMY

On May 3, 1917, tables of organization for the United States Army, as authorized by the national defense act approved June 3, 1916, were promulgated. These tables included the typical Infantry and Cavalry divisions, the division being then our highest administrative unit.

For present purposes, the table for the Infantry division only, at maximum strength, will be given. Following this, tables for Medical Department organizations of and personnel attached to this division will be given. Then will be shown the changes made in the general Tables of Organization, from time to time, and with them, the modified changes in the tables concerning the Medical Department organizations and personnel attached to mobile organizations.

TABLE 23.—*Infantry division*

MAXIMUM STRENGTH

1	2	3	4	5	6	7	8	9	10	11	12
Units	Headquarters	3 infantry brigades	1 field artillery brigade	1 regiment of cavalry	1 regiment of engineers	1 field signal battalion	1 aero squadron	Total division	Aggregate division and trains (wagon)	Aggregate division and trains (motor)	Remarks
Combatant.....	24	471	127	52	33	13	18	738	768	778	
Medical Department.....	3	36	15	6	3	1	1	65	125	117	
Chaplain.....		9	3	1	1			14	14	14	
Total commissioned.....	27	516	145	59	37	14	19	817	907	909	
Field clerk.....	3	3	1					3	3	3	
Combatant.....	114	17,766	3,816	1,487	1,038	239	180	24,610	26,014	26,040	
Medical Department.....	9	297	69	33	23	6	4	441	1,332	1,332	
Total enlisted.....	123	18,063	3,885	1,520	1,061	245	184	25,051	27,346	27,422	
Aggregate combatant.....	138	18,237	3,943	1,539	1,071	252	168	25,348	26,782	26,808	
Aggregate.....	153	18,579	4,030	1,579	1,098	259	173	25,871	28,256	28,334	
Combat train.....		90		8	16	9		132	518	194	
Field train, ration.....	3	90	54	13	8	3		180	360	180	
Field train, baggage.....	2	51	11	16	3	4		87	131	119	
Total wagons.....	5	249	65	37	27	16		399	1,009	493	
Guns, 3-inch field.....			48					48	50	50	
3.8-inch howitzer.....			24					24	25	25	
Motor cars.....	5							6	12	34	
Motor trucks.....	1							25	67	627	
Motor cycles, with side cars.....	21	18	6					51	64	106	
Aeroplanes.....								12	12	12	
Ambulances.....								48	48	48	
Other carriages.....			282					306	323		
Horses, riding.....	130	687	1,233	1,541	292	170		4,053	4,616	4,325	
Horses, draft.....			2,160			16		2,176	2,230	2,188	
Total horses.....	130	687	3,393	1,541	292	186		6,229	6,846	6,713	
Mules, riding.....		54	12	6				72	224	72	
Mules, pack.....		225	6	29	49	17		326	337	337	
Mules, draft.....	20	1,032	272	152	112	36		1,624	4,314	2,178	
Total mules.....	20	1,311	290	187	161	53		2,022	4,875	2,587	
Machine guns.....		54		6						92	
Rifles.....	98	16,419	13	1,340	978		12	72	20,345	20,345	
Pistols.....	130	1,818	3,936	1,504	348	251	173	19,002	8,653	8,651	
Net length in column of route, yards.....	200	11,200	9,000	2,500	1,200	500	500	25,100	34,500	32,800	1 Miles.

TABLE 36.—*Trains—Infantry division—Sanitary*

MAXIMUM STRENGTH

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Units	Motor-driven ambulance company	Animal-drawn ambulance company	Ambulance companies				Motor-driven hospital		Animal-drawn hospital		Field hospitals		4 camp infirmaries	Aggregate	Remarks
			Head- quar- ters	2 motor- driven	2 animal- driven	Total	Head- quar- ters	2 motor- driven	Head- quar- ters	2 animal- driven	2 motor- driven	2 animal- driven	Total		
Major.....			1			1	1	1	1		2	2	5	6	
Captain.....			a 1	10	10	21	5	5	a 1	10	10	10	21	42	
First lieutenant.....	5	5	1			1								1	
Veterinarian.....															
Total commissioned.....	5	5	3	10	10	23	6	6	2	12	12	12	26	49	
Sergeant, first class.....	2	2		4	4	8	3	3		6	6	6	12	20	
Sergeant.....	11	11	1	22	22	45	6	6	1	12	12	12	25	73	
Corporal.....	6	6		12	12	24								24	
Horseshoer.....														4	
Saddler.....														4	
Farrier.....														4	
Electrician.....														4	
Mechanic.....	1	1		2	2	4	1	1		2	2	2	4	8	
Cook.....	3	3		6	6	12	2	2		4	4	4	8	20	
Private, first class.....															
Private.....	96	124	5	192	248	445	68	68	5	136	130	130	271	720	a An officer of the Quartermaster Corps as supply officer.
Total enlisted.....	119	150	6	238	300	544	80	80	6	160	160	160	326	878	
Aggregate.....	124	155	9	248	310	567	86	86	8	172	172	172	352	927	
Motor ambulances.....	12			24		24								24	
Motor trucks.....	3			6		6	11				22		22	28	
Motor cars.....							2				4		4	4	
Motor cycles.....	3			6		6	2							10	
Amphibians.....														24	
Wagons.....	4						21							24	
Horses, riding.....							8							26	
Mules, pack.....							56							116	
Mules, draft.....							8							8	
Total mules.....	70						132				60		60	208	
Net length, yards.....			30	250	400	680					60		60	216	
									30	180	220		430	50	1,160

TABLE 1.—*Infantry Division*

Series A.

August, 1917.

MAXIMUM STRENGTH

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Units				One field Artillery brigade (2 regiments 3-inch guns, 1 regiment 4.7 or 6-inch howitzer, 1 trench mortar battery)	One machine-battalion (4 companies)	One regiment Engineers	One Signal battalion	Train, headquarters and military police	Ammunition	Supply	Engineers	Sanitary	Total trains	Total division	Remarks
1	Combatant.....	26	430	185	26	45	13	10	28	8	2	2	50	775	
2	Medical.....	3	30	16	1	3	1	3				47	50	104	
3	Chaplain.....		4	3		1								8	
4	Total commissioned a.....	29	464	204	27	49	14	13	28	8	2	49	100	887	a Three field clerks and one postal agent attached to division headquarters.
5	Enlisted, combatant.....	127	15,532	4,781	728	1,589	241	312	934	464	82		1,792	24,810	
6	Enlisted, medical.....	8	404	83	13	28	7	12					900	912	1,455
7	Total enlisted.....	135	15,956	4,864	741	1,617	248	324	934	464	82		2,704	26,265	
8	Aggregate, combatant.....	153	15,962	4,966	754	1,634	254	322	962	472	84	2	1,842	25,585	
9	Aggregate.....	164	16,420	5,068	768	1,666	262	337	962	472	84	949	2,804	27,152	b Includes medical carts or pack mules for medical supplies.
10	Wagon, combat, 4-mule.....		102		8		5		33		18		51	166	
11	Wagon, ration and baggage, 4-mule.....	5	98	76	5	7	4	2	8		1	26	37	292	
12	Rolling kitchen, 4-mule.....	1	70	25	4	7	1	2	3			4	9	117	
13	Total wagons.....	6	270	101	17	14	10	4	44		19	30	97	515	
14	Cart, combat, 1-mule.....		342		96									338	
15	Cart, ration, 2-mule.....		72	26	5	6	1	2					2	102	
16	Cart, water, 2-mule.....	1	66	25	4	6	1	2				8	11	114	
17	Cart, medical, 1-mule.....		12	b 6										18	
18	Total carts.....	1	392	57	105	12	2	4			1	8	13	582	

19	Motor car.....	12	6	5	1	2	5	7	1	5	20	44
20	Motor truck.....	1		7				101	187	12	328	336
21	Rolling kitchen, trail, mobile.....							4		4	8	8
22	Motor cycle, with side car.....	21	16	12	16	4	4	18	1	2	37	102
23	Bicycle.....		184	41	10	24					259	
24	Ambulance.....			216				36		48	48	48
25	Caisson.....			79	46	6		4			36	242
26	Other carriage.....							148		7	11	142
27	Horse, riding.....	114	316	1,416	34	52	170	301		5	558	2,660
28	Horse, draft.....			2,469	124	18		276			276	2,887
29	Total horses.....	114	316	3,885	34	176	188	301	424	5	104	834
30	Mule, pack.....				b 49	b 22		b 3		b 8	11	82
31	Mule, riding.....		54	22	14							90
32	Mule, draft.....	28	1,638	518	198	84	42	24	184	110	232	550
33	Total mules.....	28	1,692	540	212	133	64	27	184	110	240	561
34	3-inch gun.....			48					2		2	50
35	4.7 or 6 inch howitzer.....			24								24
36	Total guns.....			72					2		2	74
37	Machine gun, heavy.....		160		64							224
38	Automatic rifle.....		768									768
39	Rifle.....	103	13,016	1,490	39	1,519		294	741	80	1,564	17,731
40	Pistol.....	142	5,462	3,454	715	115	254	290	221	4	2	10,682
41	Trench mortar.....			12								12
42	1-pounder cannon.....		12									12
43	Trench knife.....		1,920									1,920
44	Range finder.....		40		16							56

TABLE 30.—*Medical Department*
ATTACHED TO ORGANIZATIONS *

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Units	Infantry				Cavalry		Field Artillery				Engineers			Signal Corps		Remarks				
	Regiment	Ma- chine- gun bat- ta- lion; (3 com- pan- ies)	Ma- chine- gun bat- ta- lion; (4 com- pan- ies)	Ma- chine- gun bat- ta- lion; (3 com- pan- ies)	Regiment	Regiment (2 battalions)	Regiment (3 battalions)	Trench mor- tar bat- tery	Regiment	Mounted battalion	Tele- graph and field bat- talion	Aero squad- ron	Bal- loon squad- ron	Trains and mili- tary posi- ble						
		Mini- mum	Maxi- mum	Mini- mum											Maxi- mum		Mini- mum	Maxi- mum	Mini- mum	Maxi- mum
Strength	Mini- mum	Maxi- mum	Maxi- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Maxi- mum	Maxi- mum	Mini- mum	Maxi- mum	Maxi- mum	Maxi- mum
Major	1 h	1 h			1 h	1 h	1 h	1 h	1 h	1 h		1 h	1 h							
Captain or first lieutenant	3 h	6 h	a 1 h	a 1 h	3 h 2 h	3 h 2 h	2 h 2 h	2 h 2 h	3 h 2 h	3 h 2 h		2 h	2 h	a 1 h 1 h	a 1 h 1 h	a 1 h	1 a	1 a	3 h 2 h	
Veterinarian																				
Total commis- sioned	4	7	1	1	6	6	5	5	6	6		3	3	2	2	1	1	1	5	
Sergeant, first class	1 h	1 h			1 h	1 h	1 h	1 h	1 h	1 h		1 h	1 h	1 h	1 h	1 h	1	1	1 h	
Sergeant	3	4	1	1	3 h 3 h	3 h 3 h	2 h 2 h	2 h 2 h	3 h 3 h	3 h 3 h		3 h	1						2 h	
Corporal																				
Private, first class, or private	27	43 h	9	12	17 h 29 h	29 h	12 h	20 h	17 h	29 h	3	12 2 h	24 2 h	5 h	9 h	6	3	6	9 h	
Total enlisted	31	48	10	13	21	33	15	23	21	33	4	15	28	6	10	7	4	7	12	
Aggregate	35	55	11	14	27	39	20	28	27	39	4	18	31	8	12	8	5	8	17	
Horse, riding	9	11	1	1	27	39	20	28	27	39	1	6	6	8	12	8			17	
Mule, pack or medical cart	1	3			2	2	2	2	2	2	2	1	1	1	1	1	1		3	
Pistols					2	2	2	2	2	2					1				2	

TABLE 1.—*Infantry Division (combat)*

Series A.

August 27, 1918.

MAXIMUM STRENGTH

1	Units	Table number	Approximate strength			Remarks
			Officers	Enlisted men	Total	
2	Division headquarters.....	2	50	238	288	NOTE.—5 field clerks and 1 postal agent attached to division headquarters.
3	2 Infantry brigades.....	3	524	16,426	16,950	
4	1 Field Artillery brigade.....	11	220	4,841	5,061	
5	1 machine-gun battalion.....	9	16	379	395	
6	1 regiment of engineers.....	29	52	1,695	1,747	
7	1 field signal battalion.....	23	15	473	488	
8	Train headquarters and military police.....	24	15	359	374	
9	Ammunition train.....	25	38	1,295	1,333	
10	Supply train.....	26	16	485	501	
11	Engineer train.....	27	2	82	84	
12	Sanitary train.....	28	51	900	951	
13	Aggregate.....		999	27,173	28,172	

January 14, 1918.

TABLE 40.—*Medical Department*
(Attached to Infantry division organizations)

Series A.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Units	Infantry				Field Artillery								Engineers	Signal Corps	Train headquarters and military police, Infantry division (Table 24)	Ammunition train, Infantry division (Table 25)	Supply train, Infantry division (Table 26)	
	Regiment (Table 4)	Machine-gun Battalion, 2 companies (Table 9)	Machine-gun Battalion, 4 companies (Table 10)	Maximum and minimum	Regiment, 2 battalions (carried on motor trucks) (Table 30)	Regiment, 2 battalions (horse-drawn) (Table 13)	Regiment, 3 battalions (Tables 17, 34, and 38)	Trench-mortar battery (Table 21)	Maximum and minimum	Maximum and minimum	Maximum and minimum	Maximum and minimum	Minimum	Maximum	Maximum and minimum	Maximum and minimum	Maximum and minimum	Maximum and minimum
		Maximum	Minimum															
Strength	Minimum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum
Major Captains or first lieutenants	1 ^h 3 ^b	1 ^h 6 ^b	a ¹	a ^{1b}	1 2 2	1 ^h 2 ^b	1 ^h 2 ^b	1 ^h 2 ^b	1 ^h 2 ^b	1 3 3	1 3 3	1 3 3	1 ^h 2 ^b	1 ^h 2 ^b	a ¹	1 ^h	1 2	1
Total commissioned	4	7	1	1	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	4 4 4	4 4 4	4 4 4	3	3	1	3	3	1
Sergeant, first class	1 ^h	1 ^h	1	1 ^h	1 2 2	1 ^h 2 ^b	1 ^h 2 ^b	1 ^h 2 ^b	1 ^h 2 ^b	1 3 3	1 3 3	1 3 3	1 ^h	1 ^h	1	1 ^h	1 3 ^h	1
Sergeants	3	4	1	1	2 2 2	2 ^b	2 ^b	2 ^b	2 ^b	3 3 3	3 3 3	3 3 3	2	2	1	1 ^h	3 ^h	1
Privates, first class ^b	27 ^b	43 ^b	4	12 ^h	12 16 16	12 ^h	12 ^h	12 ^h	20 ^b	17 29 29	17 29 29	3	12 ^h	24 ^h	12	4 ^h	25 ^h	8
Privates ^b																		
Total enlisted	31	48	6	14	15 19 19	15	15	23	21	21 33 33	21 33 33	4	15	27	14	6	29	10
Aggregate	35	55	7	15	22 26 26	18	18	26	25	25 37 37	25 37 37	4	18	30	15	7	32	11
Horses, riding	8	11	3	3		18	18	26					6	6		7	4	
Mules, draft and pack	1	3	1	1		2	2	2					2	2		3	5	
Ambulance, 4-mule, Q. M. C.																		
Carts, medical, 1-mule, Q. M. C.																		
Ambulances, motor, M. D.	1	3	1	1	2 2 2	2	2	2		3 3 3	3 3 3	1	2	2		3	1	
Car, motor, 5-passenger, Q. M. C.																		
Motor cycles, with side cars, M. D.					3 3 3	3	3			4 4 4	4 4 4	2				2	5	2
Truck, cargo, 2-ton, Q. M. C.			2		1 1 1					2 2 2	2 2 2						1	
Trucks, passenger, 2-ton, O. D.																		

^a Normally a first lieutenant.^b Ratio of privates, first class, to privates must not exceed 1 : 2.^c Mounted on horse.

TABLE 28.—Sanitary train—Infantry Division

MAXIMUM STRENGTH																
Series A.																
April 17, 1918																
1	Units	2	3	4	Ambulance section			7	8	Field hospital section			12	13	14	15
					Ambulance company, motor	Headquarters	Ambulance company, animal drawn			3 companies, motor	Field hospital company, animal drawn	Headquarters					3 companies, motor	Total
2	Lieutenant colonel	1 ^b		1 ^b				1	1							Total train
3	Major															
4	Captain			1 ^b				1 ^b	1 ^b							
5	First lieutenants	2 ^a 1 ^b	5	2 ^a 1 ^b	5 ^b	15	21	5	5							
6	Total commissioned	2	5	2	5	15	22	6	6	2	18	26				
7	Sergeants, first class	1	2 ^a			6	8	3	3							1
8	Sergeants	1 ^b 1 ^b	11 ^b	2 ^a 1 ^b	11 ^b	33	46	6	6							6
9	Corporals		6 ^c		6 ^c	18	24	3	3							3
10	Cooks		3	1 ^a	3	9	13	2	2	1 ^a	6	9				3
11	Farmers				1 ^b		1									2
12	Horseshoers				2		2									3
13	Mechanics		1		1	3	4	1	1		3	4				3
14	Saddlers				1		1									2
15	Wagoners ^a	1	16 ^k	1 ^k	18	48	67	13 ^k	8		39	47				123
16	Privates, first class															
17	Privates	1 ^b	83 ^d	2 ^b 61 ^a	410 ^{gh}	249	363	55	56 ^h	102 ^{gh}	165	229			6	599
18	Total enlisted	5	122	10	153	366	529	83	11	82	249	342	16		8	900
19	Aggregate	7	127	12	158	381	551	89	13	88	267	368	16		9	951
20	Horses, riding	3 ^x		7	24		31		7	22		29				62 ^{xy}
21	Mules, draft				71 ^{31x}		71			63 ^{56x}		35				138 ^{56x}
22	Mules, pack				4		4									4
23	Total mules				75 ^{31x}		75			35 ^{56x}		35				112 ^{56x}
24	Ambulances, 4-mule, ^{2x} Q. M. C.															12
25	Carts, water, 1-mule, Q. M. C.				12		12									2
26	Kitchens, rolling, 4-mule, ^{2x} Q. M. C.				1		1			1		1				2
27	Wagons, ration and baggage, 4-mule, ^{2x} Q. M. C.				4		4			7		7				19
28	Ambulances, motor, M. D.		12			36	36						8			35
29	Cars, motor, Q. M. C.	1		1		3	4	1			3	3				8
30	Cars, water, trail-mobile, Q. M. C.		1			3	3				3	3				6

TABLE 101.—Army Corps
MAXIMUM STRENGTH

Series B.

March 5, 1918.

1	Units	2	3	Approximate strength			7
		Number	Table number	Officers	Enlisted men	Aggregate	Remarks
1							
2	Corps headquarters	1	102	54	411	465	a Modified as per note (c) Table II.
3	Combat divisions	4 ^b	1	3,776	107,084	111,460	b Until Table 118 is issued, Table 4, T. of O., May 3, 1917, will govern.
4	Replacement division	1 ^c	1 ^a	952	27,130	28,082	c Included in Third Replacement Division.
5	Replacement division	1 ^c	1 ^a	942	26,495	27,437	d Corps Engineer park formed by consolidation of divisional Engineer trains.
6	Infantry pioneer regiment	1 ^c	103	94	3,418	3,412	e Includes 4 ambulance companies (motor) and 4 field hospital companies withdrawn from replacement divisions.
7	Cavalry regiments	2 ^k	118 ^h	118	3,040	3,158	f Includes 4 ambulance companies (motor) and 4 field hospital companies withdrawn from replacement divisions.
8	Artillery brigade headquarters	1 ^c	11	(^c)	(^c)	(^c)	g Third Division is a replacement and school division.
9	Regiment 4.7-inch guns	1 ^c	37	(^c)	(^c)	(^c)	h Sixth Division is a base and training division.
10	Regiment 155 mm. guns	1 ^c	38	(^c)	(^c)	(^c)	i First, Second, Fourth, and Fifth Divisions.
11	240 mm. trench-mortar battalion	1 ^c	104	35	717	752	j Corps troops.
12	Antiaircraft 3-inch Field Artillery battalion	1 ^c	107	28	534	560	k Corps troops.
13	Antiaircraft machine-gun battalion	1 ^c	116	28	737	765	l First, Second, Fourth, and Fifth Divisions.
14	Corps artillery park	1 ^c	112	34	1,300	1,334	m 1 squadron attached to each division; regiment headquarters used in charge of inspection and schools.
15	Engineer Corps regiment ^{do}	1 ^c	111	64	1,647	1,711	n Corps regiment supplemented by a third battalion (sappers) detached temporarily from the Third or Sixth Divisions.
16	Engineer pontoon train	1 ^c	113	2	170	226	o Exclusive of aviation troops.
17	Field signal battalion, S. C.	1 ^c	123	15	473	488	
18	Field signal battalion, S. C.	1 ^c	114	10	216	226	
19	Sanitary train	1 ^c	28	(^c)	(^c)	(^c)	
20	Supply train	1 ^c	26	16	485	501	
21	Troop transport train	1 ^c	26	16	485	501	
22	Reconnoitering depot	1 ^c	332	6	157	163	
23	Mobile veterinary hospital	1 ^c	109	2	35	37	
24	Aviation troops	(^k)	(^l)	(^l)	(^l)	1,651	
25	Total			6,180 ^o	175,034 ^o	182,865	

TABLE 201.—Army troops

Series C.

November 7, 1918.

1	Units	2	3	Approximate strength			7		
				Number of units	Table number	Officers		Total	
						Enlisted			Total
2	Army headquarters	1	202	163	778	941	a Each brigade consists of 1 brigade headquarters, Table 204, 1 mobile ordnance repair shop, Table 228, 1 ammunition train, Table 227, and 3 regiments. b 4 from depot divisions. c 1 regiment of Engineers. d 1 regimental headquarters; 1 battalion of Engineers (supply); 1 battalion of Engineers (workshop); 1 service battalion.		
3	Army corps	(Normally 5 corps to an army, but this number may vary.	24	20	800	820			
4	Military police companies	4	103	1,212	41,400	42,612			
5	Pioneer regiments of Infantry	12	163	51	207	254			
6	Army Artillery headquarters	1	203	968	24,060	25,028			
7	155 mm. gun brigades ^a	4	223						
8	194 mm. gun brigade	1							
				Table not prepared.					

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